INCH-POUND
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9 January 1998
SUPERSEDING
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PURCHASE DESCRIPTION

RECOVERY VEHICLE, FULL-TRACKED, HEAVY, M88A2; PREPARATION FOR STORAGE AND SHIPMENT OF

This purchase description is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This purchase description covers processing of the Recovery Vehicle, Full-Tracked, Heavy, M88A2 for immediate use, shipment and for domestic or overseas shipment and storage.

1.2 Classification. Processing will be of the following levels of protection (see 3.4.2 and 6.2):

Level A: Maximum protection. Maximum protection, called Level A, is processing for domestic and overseas shipment and any outside storage in excess of 90 days from the date of processing (periodic care and additional preservation is required during storage).

Level B: Intermediate protection. Intermediate protection, called Level B, is processing for immediate use, shipment, domestic and overseas shipment (excluding open deck loading) and for any storage not to exceed 90 days from the date of processing.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.

AMSC N/A AREA PACK

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this purchase description. This section does not include documents cited in other sections of this purchase description or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirement documents cited in sections 3 and 4 of this purchase description, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

A-A-203	- Paper, Kraft, Untreated.
A-A-374	- Sodium Bicarbonate, Technical.
A-A-883	- Tape, Pressure Sensitive Adhesive, Masking.
A-A-1051	- Paperboard, Wrapping and Cushioning.
A-A-50177	- Paper, Lens.
O-E-760	- Ethyl Alcohol (Ethanol); Denatured Alcohol; Proprietary Solvents and Special Industrial Solvents.
O-S-801	- Sulfuric Acid, Electrolyte (for Storage Batteries).
VV-L-800	- Lubricating Oil, General Purpose, Preservative (Water-Displacing, Low Temperature).
PPP-B-566	- Boxes, Folding, Paperboard.
PPP-B-621	- Boxes, Wood, Nailed and Lock - Corner.
PPP-C-1797	- Cushioning Material, Resilient, Low Density, Unicellular, Polypropylene Foam.

DEPARTMENT OF DEFENSE

MIL-B-117	- Bags, Sleeves and Tubing.
MIL-B-121	- Barrier Material, Greaseproofed, Waterproofed, Flexible.
MIL-B-131	- Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat Sealable.

MIL-C-450	- Coating Compound, Bituminous Solvent Type, Black (for Ammunition).
MIL-L-2104	- Lubricating Oil, Internal Combustion Engine, Combat/Tactical Service.
MIL-PRF-2105	- Lubricating Oil, Gear, Multipurpose (Metric).
MIL-C-5501	- Caps and Plugs, Protective, Dust and Moisture Seal.
MIL-PRF-10924	- Grease, Automotive and Artillery.
MIL-PRF-16173	- Corrosion Preventive Compound, Solvent Cutback, Cold-Application.
MIL-D-16791	- Detergents, General Purpose (Liquid, Nonionic).
MIL-L-21260	- Lubricating Oil, Internal Combustion Engine, Preservative and Break-in.
MIL-T-22085	- Tape, Pressure-Sensitive Adhesive, Preservation and Sealing.
MIL-B-22191	- Barrier Materials, Transparent, Flexible, Heat Sealable.
MIL-P-46002	- Preservative Oil, Contact and Volatile Corrosion-Inhibited.
MIL-H-46170	- Hydraulic Fluid, Rust Inhibited, Fire Resistant, and Synthetic Hydrocarbon Base.
MIL-T-50036	- Talc, Technical, T1 and T3.
MIL-D-81298	- Dye, Liquid, for the Detection of Leaks in Aircraft Fuel Systems.
MIL-T-83133	- Turbine Fuels, Aviation, Kerosene Types, NATO F-34 (JP-8) and NATO F-35.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-129	- Marking for Shipment and Storage (Part 1 of 4 parts).
MIL-STD-2073-1	- Military Packaging, Standard Practice for.

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government drawings and publications. The following Government drawings and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

TECHNICAL MANUALS

TM 9-2350-292-10	- Operators Manual for Recovery Vehicle, Full-Tracked, Heavy, M88A2.
TM 9-2350-292-20	- Unit Maintenance Manual for Recovery Vehicle, Heavy, Full-Tracked, M88A2.
TM 9-5130-338-12&P	- Hydraulic Impact Wrench.

(Copies of drawings, publications, and other Government documents required by the contractors in connection with specific acquisition functions should be obtained from the U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000.)

MILITARY TRAFFIC MANAGEMENT COMMAND TRANSPORTATION ENGINEERING AGENCY (MTMCTEA)

Pamphlet 55-19, Third Edition	- Tiedown Handbook For Rail Movements.
Pamphlet 92-55-20	- Tiedown Handbook For Truck Movements.
Pamphlet 92-55-22	- Marine Lifting and Lashing Handbook.

(Application for copies should be addressed to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTTE-DPE, 720 Thimble Shoals Blvd, Suite 130, Newport News, VA 23606-2574.)

DEPARTMENT OF TRANSPORTATION (DOT)

Code of Federal Regulations (CFR), Title 49: Transportation.

(Application for copies should be addressed to the U.S. Government Printing Office, Superintendent of Documents, Public Documents Department, Washington, DC 20402-9371.)

JOINT SERVICE MANUAL

AFJMAN24-204/TM38-250/NAVSUP PUB 505/MCO P4030.19F/DLAM 4145.3 - Preparing Hazardous Materials for Military Air Shipments.

(Application for copies should be addressed to HQ AFMC/LGTP, 5215 Thurlow Street, Wright-Patterson AFB, OH 45433-5540.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE

ANSI O1 - Industrial Wire Cloth.

(Application for copies should be addressed to the American National Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D235	- Standard Specification for Mineral Spirits (Hydrocarbon Dry Cleaning Solvent) (DoD Adopted).
ASTM D1974	- Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes (DoD Adopted).
ASTM D3950	- Standard Specification for Strapping, Plastic (and Seals) (DoD Adopted).
ASTM D3953	- Standard Specification for Strapping, Flat Steel and Seals (DoD Adopted).
ASTM D4675	- Standard Guide for Selection and Use of Flat Strapping Materials (DoD Adopted).
ASTM D4727/D4727M	- Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes (DoD Adopted).
ASTM D5118/D5118M	- Standard Practice for Fabrication of Fiberboard Shipping Boxes (DoD Adopted).
ASTM D5330/D5330M	- Standard Specification for Pressure Sensitive Tape for Packaging, Filament-Reinforced (DoD Adopted).

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

ASSOCIATION OF AMERICAN RAILROADS

Section No. 1 - General Rules Governing Loading of Commodities on Open Top Cars.
Section No. 6 - Rules Governing the Loading of Department of Defense Materiel on Open Top Cars.

(Application for copies should be addressed to the Association of American Railroads, 50 F Street NW, Washington, DC 20001-1564.)

CATERPILLAR COMPANY SPECIFICATION

CAT TD T0, T0-4 - Lubricating Oil, Transmission and Drive Train.

(Application for copies should be addressed to the local Caterpillar Dealer.)

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

Dangerous Goods Regulations.

(Application for copies should be addressed to the International Air Transport Association, 2000 Peel Street, Montreal, Quebec H3A 2R4, Canada.)

INTERNATIONAL MARITIME ORGANIZATION (IMO)

International Maritime Dangerous Goods (IMDG) Code.

(Application for copies should be addressed to the International Maritime Organization (IMO), Publications Section, 4 Albert Embankment, London SEI 7SR, United Kingdom.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), 1 of the first 10 production processed vehicles shall be subjected to first article inspection (see 4.2).

3.2 Equipment. Equipment for processing of the vehicle shall be as specified herein. Equipment not specified herein shall be sufficient and safe when used for the intended purpose.

3.2.1 Preservative container assembly. A preservative container with fittings, a valve for flow regulation, and a hose with fittings and adapters for connection to the fuel system shall be provided for Level A processing of the fuel system (see Figure 1).

3.2.2 Recovery container. Recovery containers to collect the used preservative shall be provided for Level A processing of the fuel system. A 3 gallon container shall be used for the main engine; one pint containers shall be used for the Auxiliary Power Unit and the Personnel Heater. The containers shall allow for measuring the amount of preservative used.

3.2.2.1 Recovery line. A clear plastic tube with fittings for attachment to fuel return lines shall be provided for Level A processing of the fuel system (see Figure 1).

3.2.3 Atomizer. An atomizer shall be provided for Level A processing of lubricant gauge openings, air intake openings, and exhaust openings.

3.2.4 Air restrictor. An air restrictor shall be provided for Level A processing of the Auxiliary Power Unit (see Figure 2).

3.3 Materials. Materials selected for use in processing the vehicle shall be sufficient and safe when used for the intended purpose.

3.3.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials shall be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs (see 6.3.1).

3.3.2 Cleaning solution. Solvent conforming to ASTM D235 and detergent conforming to type I of MIL-D-16791 shall be provided for cleaning the interior of the vehicle. The detergent shall be in solution with warm water.

3.3.3 Optical glass cleaning solution. An ethyl alcohol solution shall be provided for cleaning optical glass. The solution shall contain ethyl alcohol conforming to O-E-760 and water.

3.3.3.1 Lens paper. Lens paper conforming to type I of A-A-50177 shall be provided for cleaning and covering optical glass surfaces.

3.3.4 Sodium bicarbonate. A solution of one-half pound of sodium bicarbonate conforming to A-A-374 to one gallon of water shall be provided for cleaning battery supports and retainers.

3.3.5 Preservatives. Preservative conforming to grade 10 of MIL-L-21260 shall be provided for Level A processing of the fuel system. Preservative conforming to grade 30 of MIL-L-21260 shall be provided for engine crankcase preservation. Preservative oil conforming to grade 1 of MIL-P-46002 shall be provided for exhaust system preservation. Preservative conforming to grade 4 of MIL-C-16173 shall be provided for coating bare exterior ferrous surfaces.

3.3.5.1 Preservative dye. An oil soluble red dye conforming to MIL-D-81298 shall be provided for first article and as required for inspection only (see 4.4). The dye shall be added to the preservative oil used for the fuel system preservation. The concentration of dye shall be sufficient to impart a marked coloring to the oil. When preservative oil and dye is used the primary and secondary fuel filters can be bypassed. Prior to vehicle shipment, the red dye must be flushed from the fuel lines and fuel filters colored with red dye must be replaced.

3.3.6 Paper. Paper having a minimum basis weight of 40 pounds conforming to style 2 of A-A-203 shall be provided for covering backrests and seats after drying.

3.3.7 Powdered talc. Powdered talc conforming to talc, technical T1, MIL-T-50036, shall be provided to coat rubber seals around hatches and doors.

3.3.8 Wire screens. Screens constructed of wire cloth conforming to ANSI/AWCI O1 shall be provided for ventilation (see Figure 3). The low carbon steel cloth shall consist of 0.047 diameter, 4 X 4 wire mesh which is hot galvanized after weaving. The screens shall be held in position by installing zinc coated hex cap screws (.375 inch, 16-UNC-2A, 0.75 inch long) and flat washers.

3.3.9 Boxes. Fiberboard boxes conforming to ASTM D5118/D5118M shall be provided for packaging. The boxes shall be sealed in accordance with ASTM D1974. Wood boxes conforming to class 2 of PPP-B-621 shall be used for packing.

3.4 Procedures and operations. Procedures and operations consist of general requirements and special requirements. General requirements shall apply to all levels of protection (see 3.4.1). Special requirements shall apply for the specified level of protection (see 3.4.2).

3.4.1 General requirements. All shipments of hazardous material within CONUS shall comply with the Code of Federal Regulations (CFR), Title 49 for all modes of transportation. International shipments shall comply with the International Maritime Dangerous Goods (IMDG) Code for overseas transport and the International Air Transport Association (IATA), Dangerous Goods Regulations for air transport. All military air shipments containing hazardous materials shall comply with the Joint Service Manual, AFJMAN24-204/ TM38-250/NAVSUP PUB 505/MCO P4030.19F/DLAM 4145.3, Preparing Hazardous Materials for Military Air

Shipments. DA Form 2258 shall be completed to record the preservation applied and deprocessing required for each vehicle. A completed DA Form 2258 and one copy of the Material Safety Data Sheet (MSDS) for each hazardous material shall be heat sealed within a bag conforming to type I, class B, style 2 of MIL-B-117 and attached within the driver's compartment. One copy of the MSDS for each hazardous material shall also be included with the shipping documentation.

3.4.1.1 Disassembly. Unless otherwise specified herein, each vehicle shall be prepared for storage and shipment in a completely assembled condition after test runs, and completion and approval of all necessary repairs. Specified equipment shall be installed and all adjustments made so that vehicle may be placed into service with a minimum of delay.

3.4.1.1.1 Disassembly for normal transport. Unless otherwise specified (see 6.2), the items listed in table I, table II and table III shall be removed from the vehicle. Disassembly shall be in accordance with the applicable technical manuals. Items removed from the vehicle for normal transport shall be configured for packaging, stowage, and securement aboard the vehicle.

3.4.1.1.2 Disassembly for special transport modes. When specified (see 6.2), additional disassembly shall be in accordance with the vehicle's transportability guidance for the specified mode of transport and the applicable technical manuals.

3.4.1.1.3 Access covers, gaskets, and hardware. Unless otherwise specified (see 6.2), the access covers, gaskets, and securing hardware shall be removed from the underside of the vehicle (see Figure 3).

3.4.1.1.4 Personnel seats. Personnel seats shall be removed from their operating position.

3.4.1.1.5 Eye bolts. Eye bolts used to install and remove the hydraulic reservoir shall be removed.

3.4.1.1.6 Radio antenna. The radio antenna with attached base shall be removed.

3.4.1.1.7 Drain plugs. The drain plug shall be removed from the re-fuel/de-fuel compartment and another drain plug shall be removed from the left side external stowage compartment used for the slave cable kit.

3.4.1.2 Cleaning and drying. Unless otherwise specified herein (see 4.4.3.2), each vehicle surface and each disassembled component shall be cleaned in accordance with selected cleaning processes as specified in MIL-STD-2073-1. Materials, equipment, and processes shall be sufficient and safe when used for the intended purpose. Cover personnel heater exhaust, auxiliary power unit exhaust openings, air intake openings for both the main engine and the

auxiliary power unit, and openings to the crew compartment to prevent entry of water during cleaning. Remove covering material after cleaning.

3.4.1.2.1 Interior of vehicle. Interior surfaces of vehicle shall be cleaned with a solution of detergent conforming to type I of MIL-D-16791 and warm water. For solvent cleaning, interior surfaces shall be cleaned with solvent conforming to ASTM D235. Water or other liquid under pressure, or steam cleaning shall not be used. After cleaning, cleaned surfaces shall be rinsed with clean water and dried. Care shall be taken during cleaning and rinsing to assure that no liquids enter instruments, connections, or other components susceptible to water damage and that water does not accumulate in areas where it cannot drain or be dried.

3.4.1.2.1.1 Battery supports and retainers. The battery supports and retainers shall be cleaned with a brush using a solution of sodium bicarbonate (see 3.3.4). After cleaning, cleaned surface shall be flushed with clean water and thoroughly dried.

3.4.1.2.1.2 Backrests and seats. Backrest and seat cushions shall be cleaned with a solution of detergent conforming to type I of MIL-D-16791, in warm water. After cleaning, cushions shall be wiped with cloth saturated with clean water to remove cleaning solution. Care shall be taken not to saturate the cushions with cleaning solution or water. After rinsing, cushions shall be thoroughly dried. For solvent cleaning, backrest and seat cushions shall be cleaned with solvent conforming to ASTM D235.

3.4.1.2.1.3 Optical glass components. Exposed optical glass components shall be cleaned by blowing exposed optical glass surfaces with air from a hand syringe, or by use of clean camel-hair brush, followed by the use of ethyl alcohol conforming to O-E-760. In cases of contamination not removed by alcohol, cleaning shall be accomplished by use of a solution consisting of two ounces of detergent conforming to type I of MIL-D-16791, one-half gallon of alcohol conforming to O-E-760, and one gallon distilled water. Using a swab made of paper conforming to type I of A-A-50177, optical glass surfaces shall be washed with the cleaning agent; and washing shall be repeated, using a clean swab each time, until no dirt or other foreign matter remains on the surface. Cleaning shall be accomplished with a minimum of pressure and rubbing, and without use of cloth or rubber materials.

3.4.1.2.2 Exterior of vehicle. Exterior surfaces of the vehicle shall be cleaned with a solution of water and detergent conforming to type I of MIL-D-16791. For solvent cleaning, exterior surfaces shall be cleaned with solvent conforming to ASTM D235. After cleaning, surfaces cleaned shall be rinsed with clean water and thoroughly dried. Exterior of vehicle shall be cleaned without permitting entry of steam or water into crew or engine compartments. If pressure spraying equipment is used in the cleaning process, the control regulation of the spraying equipment and the method of spray cleaning shall be sufficient to prevent damage.

3.4.1.3 Preservation. Unless otherwise specified (see 6.2), each vehicle surface and component which is susceptible to corrosion or deterioration by environmental conditions shall be protected by application of selected preservatives in accordance with MIL-STD-2073-1. Preservative materials, equipment, and processes shall be sufficient and safe when used for the purpose intended. Selected preservatives shall be compatible with the item composition and intended use. Preservation shall be completed immediately after cleaning and drying. Any item damaged by preservation shall be replaced or repaired (see 4.4.3).

3.4.1.3.1 Disassembled items, component, and support items. Each disassembled item, each component, and support item shall be processed in accordance with MIL-STD-2073-1 for the method of preservation. See table I for disassembled items. See table II and table III for component and support items.

3.4.1.3.2 Operational fluids and lubricants. Each vehicle and component shall conform to their respective operational fluid and lubricant requirements. Contaminated fluids and lubricants shall be removed and properly disposed in accordance with unit standard operating procedures. Operational fluids and lubricants shall be applied in accordance with TM 9-2350-292-10 Appendix F, TM 9-2350-292-20 PMCS table 2-1 for quarterly intervals, and the other drawings and documents applicable to the vehicle components. Any excess operational fluid or lubricant shall be removed and properly disposed in accordance with unit standard operating procedure.

3.4.1.3.2.1 Lubrication of fittings and surfaces. Grease conforming to MIL-PRF-10924 shall be applied in accordance with TM 9-2350-292-20 PMCS table 2-1 for quarterly intervals.

3.4.1.3.2.2 Lubrication of oil can points. Lubricating oil conforming to VV-L-800 shall be applied to the oil can points as specified in Appendix F of TM 9-2350-292-10.

3.4.1.3.3 Transmission assembly and final drives. The transmission assembly and final drives shall contain operational lubricant only. The transmission shall contain lubricant conforming to (Caterpillar) CAT TD T0, T0-4 of the grade specified (see 6.2), filled to operating level.

3.4.1.3.4 Main and auxiliary engine crankcases. The main engine and auxiliary engine crankcases shall be filled to operating level with preservative/lubricant in accordance with the specified level of protection (see 3.4.2 for special requirements).

CAUTION: For shipment to, storage in, or prior to placing the vehicle in operation in areas where the ambient temperature is below -20°F, lubricating oil must be drained from the crankcases and crankcases filled with the appropriate seasonal grade of oil as specified on the applicable specification, drawing, or technical manual. For shipments made to these areas, a red warning tag containing the following information shall be located in a conspicuous location

within the driver's compartment: "DRAIN AND FILL CRANKCASE WITH APPLICABLE OPERATING OIL."

3.4.1.3.5 Backrests and seats. The cushions of backrests and seats shall be covered with paper conforming to style 2 of A-A-203 with a minimum basis weight of 40 pounds. The paper shall be secured with tape conforming to type I of A-A-883.

3.4.1.3.6 Battery supports and retainers. Battery supports and retainers shall be preserved with compound conforming to MIL-C-450.

3.4.1.3.7 Access covers and gaskets. After removing the access covers and gaskets from the underside of the vehicle, unpainted metal surfaces exposed by removal of these items shall be coated with preservative conforming to grade 4 of MIL-PRF-16173.

3.4.1.3.8 Winch assemblies. All unpainted and unplated surfaces of winch assemblies, including cable drums, stay line boom, controls, and linkage, shall be coated with preservative conforming to grade 4 of MIL-PRF-16173. The winch cables shall be coated with preservative conforming to grade 1 of MIL-PRF-16173 and rewound on the drum after drying.

3.4.1.3.8.1 Winch gearcases. The winch gearcases shall be filled to operating level with lubricant conforming to the specified grade of MIL-PRF-2105 (see 6.2).

3.4.1.3.9 Wire Ropes. The stayline cables and wire ropes shall be coated with preservative conforming to grade 1 of MIL-PRF-16173.

3.4.1.3.10 Power take-off clutch. The power take-off shall be processed in accordance with the specified level of protection (see 3.4.2 for special requirements).

3.4.1.3.11 Fire extinguishers. Fire extinguishers shall have a minimum of 90 percent of the rated full charge. All seals shall be intact. All exterior emergency handles shall be covered with tape conforming to MIL-T-22085, type IV. DA Form 253 or appropriate documentation shall be completed and securely attached to each extinguisher (see 6.2.1).

3.4.1.3.12 Hydraulic system. The hydraulic system shall contain hydraulic oil conforming to MIL-H-46170, filled to operational level as listed in TM 9-2350-292-10 Appendix F and TM 9-2350-292-20 PMCS table 2-1.

3.4.1.4 Packaging. Unless otherwise specified (see 6.2), each Disassembled, Component and Support Item shall be packaged in accordance with MIL-STD-2073-1 for the method specified in table I, table II and table III (see 4.4.2.1). The cartons used for unit packaging shall conform to ASTM D5118/D5118M, type CF, class WR, grade V3c, and shall be of the style and

size listed in table I, table II and table III. Sufficient blocking/bracing and cushioning shall be used within the containers to prevent damage during shipping and handling. The bags used for unit packaging shall conform to MIL-B-117, type I, class B or C, style 1 or 2. The wrapping material shall conform to MIL-B-121, type I or II, class 2, grade A or C. Cushioning material shall be either type II, class 1, of PPP-C-1797 or type II of A-A-1051 as specified.

3.4.1.4.1 Batteries, connecting cables, and electrolyte. Batteries, connecting cables and battery electrolyte shall be processed in accordance with the specified level of protection (see 3.4.2 for special requirements).

3.4.1.4.2 Compressed gas cylinders. Compressed gasses shall be contained in Department of Transportation (DOT) approved cylinders. Table II - item 21, Cylinder, Compressed Gas, "Acetylene", NSN 6830-00-292-0137, shall include DOT 8L cylinder with a valve protection cap. Table II - item 22, Cylinder, Compressed Gas, "Oxygen", NSN 6830-00-292-0129, shall include DOT 3AA2265 cylinder with a valve protection cap. Table II - item 23, Extinguisher, Fire Portable, 5-lb. CO_2, NSN 4210-01-270-4512, shall include DOT SP 6557 cylinder. Each fixed fire extinguisher shall use DOT 3AA2015 cylinders.

3.4.1.5 Packing. Unless otherwise specified (see 6.2), each Disassembled, Component and Support Item shall be packed as specified in table I, table II and table III. Exterior shipping containers shall conform to PPP-B-621, class 2, as shown in Figure 4 through Figure 11. Blocking, bracing, cushioning, and immobilization of the items within the shipping containers shall meet the requirements of MIL-STD-2073-1.

3.4.1.5.1 Access covers. The access covers shall be packed in Weather Resistant boxes conforming to ASTM D5118/D5118M and sealed according to ASTM D1974.

3.4.1.5.2 Access cover gaskets. The gaskets used on the access covers shall be preserved in accordance with method 30 of MIL-STD-2073-1. The bagged gaskets shall be packed into a Weather Resistant box conforming to ASTM D5118/D5118M and sealed according to ASTM D1974. The original hardware used to secure the access covers shall be packed, together, into a weather resistant box conforming to ASTM D5118/D5118M and sealed according to ASTM D1974.

3.4.1.5.3 Eye bolts. The removed eye bolts shall be wrapped together in one piece of barrier material conforming to MIL-B-121. The wrap shall be secured with tape.

3.4.1.5.4 Radio antenna. The radio antenna with attached bracket shall be cushioned with PPP-C-1797 and placed into a weather resistant box conforming to ASTM D5118/D5118M and sealed according to ASTM D1974.

3.4.1.5.5 Drain plugs. The drain plugs shall be combined into a bag conforming to MIL-B-117 and closed by stapling, taping or heatsealing.

3.4.1.6 Marking. In addition to any special marking required herein or in the contract or order (see 6.2), vehicles shall be marked in accordance with MIL-STD-129 (see 4.4.3 and 6.). A dangerous cargo manifest shall list the vehicle as "Class 9, MISCELLANEOUS HAZARDOUS MATERIAL". Vehicle shipment data shall include the quantity, proper shipping name and identification of hazardous materials aboard the vehicle (see table IV).

3.4.1.6.1 Marking of component and support items. The vehicle shipping data shall include the quantity, proper shipping name and identification of hazardous materials. If separate shipment is specified (see 6.2), the shipping data for each hazardous material shall include the quantity, proper shipping name and identification of hazardous materials aboard the vehicle (see table IV). One copy of the MSDS for each hazardous material shall be included with the shipment and with the shipping documentation.

3.4.1.6.1.1 Basic Issue Items (BII). Each unit package and each item not provided with unit packaging shall be marked in accordance with MIL-STD-129. Exterior shipping containers shall be marked in accordance with MIL-STD-129 and shall contain the identification data: ASSORTED BII FOR (NSN), (U.S. ARMY REGISTRATION NUMBER). The NSN and registration number of the vehicle shall be used. Special handling marking shall be applied and packing lists shall be prepared in accordance with MIL-STD-129.

3.4.1.6.1.1.1 Marking of portable fire extinguishers. Each portable fire extinguisher shall be marked "NON FLAMMABLE GAS" in addition to marking in accordance with MIL-STD-129.

3.4.1.6.1.2 Components of End Item (COEI). Each unit package and each item not provided with unit packaging shall be marked in accordance with MIL-STD-129. Exterior marking of assorted items packed together shall contain the identification data: ASSORTED COEI FOR (NSN), (U.S. ARMY REGISTRATION NUMBER). The NSN and registration number of the vehicle shall be used. Special handling marking shall be applied and packing lists shall be prepared in accordance with MIL-STD-129.

3.4.1.6.1.3 Disassembled items. The packaging for each item listed in table I shall be marked in accordance with MIL-STD-129. Exterior marking of assorted items packed together shall contain the identification data: ASSORTED ITEMS FOR (NSN), (U.S. ARMY REGISTRATION NUMBER). The NSN and registration number of the vehicle shall be used. Special handling marking shall be applied and packing lists shall be prepared in accordance with MIL-STD-129.

3.4.1.6.2 Marking of additional items. The unit packaging of additional items shipped with the vehicle shall be marked in accordance with MIL-STD-129. Exterior packs shall be marked in accordance with MIL-STD-129. Special handling marking shall be applied and packing lists shall be prepared in accordance with MIL-STD-129.

3.4.1.7 Stowage. Unless otherwise specified (see 6.2 and 3.4.1.7.3), all disassembled items shall be stowed aboard the vehicle for shipment and all component and support items shall be stowed aboard the vehicle for shipment. Stowage and securement methods shall be sufficient and safe for the intended purpose. Stowage, securement, including blocking and bracing shall provide clearance for sling cables and lifting eyes, and shall meet weight and clearance requirements of the shipment medium. Blocking and securement by banding shall prevent movement within the vehicle.

3.4.1.7.1 Stowage of disassembled items. The Disassembled Items shall be stowed and secured to meet the requirements specified herein and to meet carrier and transportation requirements (see 4.4.2). The stowage location for each item shall be as specified in table I and as shown in Figure 12.

3.4.1.7.2 Stowage of component and support items. Unless otherwise specified (see 6.2), Component and Support Items shall be stowed and secured to meet the requirements specified herein and to meet carrier and transportation requirements. The stowage location for each item shall be as specified in table II, table III, and as shown in Figure 12 and Figure 13.

3.4.1.7.2.1 Interior stowage. Box numbers 1 through 7 (see Figure 4 through Figure 10) shall be placed inside the vehicle crew compartment (see Figure 12) and secured together and to the vehicle floor using strapping conforming to ASTM D3953 and ASTM D4675 to prevent movement. Blocking and bracing shall be used to prevent movement and shifting of the boxes. Figure 2 shows the stowage location for remaining items. The fuel cans (BII items 11) shall be placed into the water can holder-bracket and secured with the nylon strapping on the bracket. The water cans (BII items 12) shall be stowed into the ammunition rack and secured with non-metallic strapping conforming to ASTM D3950 and ASTM D4675. The acetylene gas cylinder (BII item 21) shall be placed into its holding bracket and bolted in place. The fire extinguishers (BII items 23) shall be secured in an upright vertical position between box 2 and box 3. The night viewer (COEI item 15) shall be stowed in the vehicle's night viewer stowage box. The stowage box shall be secured with an antipilferage seal. The sprocket bolt nuts, support roller bolts, and road wheel nuts (COEI items 19-21) shall be placed in the oddment tray.

3.4.1.7.2.2 Exterior stowage. Box 8 (see Figure 11) shall be placed onto the spade (see Figure 13) and secured to the spade and front of vehicle using minimum 1.25 inch metallic strapping conforming to ASTM D3953 and ASTM D4675. The items listed shall each be bolted onto the vehicle in the designated location for normal stowage during operation (see Figure 13): the auxiliary boom (BII item 4), tow cables (BII items 14), lifting chain (BII item 17), oxygen

gas cylinder (BII item 22), tow bar assemblies (BII items 65), vise (COEI item 16), sprockets (COEI item 31), and solid rubber wheels (COEI items 32 and 33). The hook block (BII item 11) shall be placed in the stowage basket located on the boom. Use blocking/bracing nailed together and strapping conforming to ASTM D3953 and ASTM D4675 to secure the hook block as shown (see Figure 13) when the cable is not rigged. When the cable is rigged onto the hook block secure in place using the straps attached to the stowage basket.

3.4.1.7.3 Separate shipment. When specified (see 6.2), certain component and support items shall be separately shipped and shall not be stowed aboard the vehicle. Separate shipment of certain component and support items shall be used to meet transport weight limits. For separate shipment, boxes 1-7 and box 8 shall be shipped together and shall not be stowed aboard the vehicle. Boxes 1-7 shall be secured on a pallet.

3.4.1.8 Closure. Specified openings of the vehicle shall remain open to allow drainage or ventilation (see 4.4.3). Other specified openings of vehicle shall be sealed to prevent entry of moisture. Processing for closure and ventilation shall meet carrier and transportation requirements.

3.4.1.8.1 Ventilation. Unless otherwise specified (see 6.2), all hull drain valves shall be placed in the open position. After removal of the access covers, gaskets, and hardware from the underside of the vehicle, screens constructed of wire cloth, 0.047 inch diameter wire, 4 squares per square inch mesh, shall be installed in access cover openings (see Figure 3). The screens shall be held in position by installing zinc coated hex screws (.375 inch, 16-UNC-2A, 0.75 inch long) and 3/8 inch plain flat washers. The following deprocessing information shall be marked on DA Form 2258: "REMOVE AND DISCARD SCREENS AND HARDWARE. INSTALL ACCESS COVERS, NEW GASKETS, AND NEW HARDWARE BEFORE OPERATION."

3.4.1.8.2 Vision blocks. Immediately after cleaning and drying the vision blocks shall be covered with lens paper conforming to A-A-50177. The lens paper shall then be covered with weather resistant fiberboard conforming to ASTM D4727M and ASTM D4727/1, heatsealed in a bag conforming to MIL-B-117 class E, type I. Secure perimeter of bagged fiberboard with tape conforming to MIL-T-22085, type IV.

3.4.1.8.3 Hatches and doors. The rubber seals around hatches and doors shall be coated with powdered talc conforming to talc, technical, T1, MIL-T-50036. Both personnel doors shall be secured with a bolt placed through the locking lugs. After the nut is drawn tight, the nut shall be tack welded to the bolt, or other equally effective method shall be used to prevent unauthorized entry. During storage, the hatches and doors shall be closed and secured in the CLOSED position.

3.4.1.9 Loading. Each vehicle shall be properly loaded and secured for transport (see 4.4.3). Loading and securement methods shall be sufficient and safe for the intended purpose. Loading and securement shall conform to carrier requirements and applicable transportation regulations.

3.4.1.9.1 Vehicle lifting and towing. Lifting and towing of the vehicle shall be in accordance with approved methods. Lifting capacity exceeding 70 tons is required.

3.4.1.9.2 Loading for commercial shipment.

3.4.1.9.2.1 Loading for commercial rail shipment. Loading and securement of commercial rail shipment within the U.S. and Canada shall conform to The American Association of Railroads, The General Rules Governing Loading of Commodities on Open Top Cars, Section 1, and Rules Governing The Loading of DoD Materiel on Open Top Cars, Section 6, Tanks and Similar Units Over 100,000 lb. Route clearances are required before movement. Other foreign rail shipments shall conform to the vehicle's transportability guidance and the applicable transportation regulations (see MTMCTEA Pam. 55-19, Third Edition, Tiedown Handbook For Rail Movements).

3.4.1.9.2.2 Loading for commercial highway shipment. Loading and securement shall conform to carrier requirements and to applicable transportation regulations. Note: vehicles on highway transport are subject to highway axle load and weight restrictions.

3.4.1.9.3 Loading for military shipment. Guidance for all modes of military shipments is provided by the Military Traffic Management Command Transportation Engineering Agency (see MTMCTEA Pam. 55-19, Third Edition, MTMCTEA Pam. 92-55-20, and MTMCTEA Pam. 95-55-22).

3.4.2 Special requirements. Special requirements for processing shall be of the specified level of protection (see 6.2). Special requirements for Level A shall be as specified in 3.4.2.1. Special requirements for Level B shall be as specified in 3.4.2.2.

3.4.2.1 Level A. When Level A processing is specified, the following special procedures and operations are required. The engine deck assembly must be removed in accordance with TM 9-2350-292-20 prior to main engine fuel system preservation. After main engine fuel system processing is complete and the engine cover is replaced in accordance with TM 9-2350-292-20, the auxiliary power unit (APU) must be used to lower the boom.

3.4.2.1.1 Main engine fuel system. The main engine shall contain preservative/lubricant conforming to grade 30 of MIL-L-21260. The type and grade of preservative/lubricant shall be marked on DA Form 2258 together with the following deprocessing instruction: "THE MAIN ENGINE CRANKCASE IS FILLED WITH PRESERVATIVE/LUBRICATING OIL GOOD

UNTIL THE FIRST REQUIRED LUBRICANT CHANGE. DO NOT DRAIN. CHECK OIL LEVEL AND IF LOW, ELEVATE TO OPERATING LEVEL WITH PRESERVATIVE/ LUBRICATING OIL (MIL-L-21260, GRADE 30)." After completion of all actions which require main engine operation, the main engine fuel system shall be processed in the following sequence of steps. It is essential to provide adequate ventilation while operating the main engine.

a. Fuel tank.
    1. Remove fuel. See TM 9-2350-292-10.
    2. Remove fuel tank cap and filler screen and coat with preservative/lubricating oil conforming to grade 30 of MIL-L-21260.
    3. Reinstall the filler screen. Add five gallons of preservative/lubricating oil conforming to grade 10 of MIL-L-21260 to the fuel tank.
    4. Reinstall tank cap and any items removed from step 1.
b. Fuel lines.
    1. Prepare preservative container assembly (see Figure 1). Position selection valve to OFF and fill with preservative/lubricating oil conforming to grade 10 of MIL-L-21260. If required for inspection (see 6.2), a solution of red dye and preservative shall be used (see 3.3.5.1).
    2. With the fuel pump switch on the instrument panel in OFF position, the quick-disconnect on the main engine inlet fuel line shall be uncoupled from the primary fuel filter (see Figure 14). Connect the line from the preservative container to the primary fuel filter.
    3. When use of red dye is required for inspection, the filter may be removed from the primary fuel filter housing and a bypass may be used to connect the fuel pump to the fuel injection line (see Figure 14). Disconnect the fuel line between the fuel pump and the secondary fuel filter at the point closest to the secondary fuel filter. The fuel injection line from the secondary fuel filter shall be disconnected at the point closest to the secondary fuel filter. Connect the fuel line from the fuel pump to the fuel injection line. The engine valve for the smoke generator must be in the open position.
    4. Uncouple the engine fuel return line quick-disconnect and fasten the transparent plastic recovery line to the fuel return line (see 3.2.2.1 and Figure 3). Position a recovery container at the end of the transparent line.
    5. Position the selector valve on the preservative container assembly to allow for flow of preservative. Turn the fuel pump switch to the ON position.
    6. Engage the smoke generator by turning the switch on the driver's control panel to the ON position. Operate the main engine at idle speed (750-800 rpm) until the remaining fuel is flushed from the fuel lines. The engine shall use preservative as fuel until 2.0 gallons of fuel and preservative are collected from the recovery line in the recovery container. An increase in the amount of smoke out of both exhaust openings shall be observed when the smoke generator is using preservative as fuel. This procedure requires approximately

three minutes. Discard the fuel mixture collected in the recovery container in accordance with unit standard operating procedure.

7. Disengage the smoke generator by turning the switch on the driver's control panel to the OFF position.
8. After allowing the engine to cool, turn the three-position "engine preheat" switch located on the main control panel to the preheat position and crank the engine for 20 seconds to preserve main engine intake manifold heater.
9. Disconnect the preservative container and reconnect the fuel lines.

3.4.2.1.1.1 Preservation of turbochargers and combustion air intake.

CAUTION: For the next procedure, each cranking period shall not be less than 15 seconds or more than 25 seconds. Special precautions shall be taken to assure that these time limits are kept, otherwise the engine starter or starter solenoid may be damaged.

a. Shut off the fuel supply to the engine by pulling out the main engine manual fuel shut-off handle.
b. Disassemble the air hose elbow from each turbocharger inlet (see Figure 15).
c. While the engine is cranked for 20 seconds, atomizer spray preservative/ lubricating oil conforming to MIL-L-21260, grade 10 into both turbocharger inlets for the first five seconds of engine cranking. One ounce of preservative shall be used. The engine may briefly fire during this cranking. Allow the engine starter to cool for three minutes.
d. Repeat this procedure four more times for a total of five times.
e. Reinstall the hose to each turbocharger inlet. Push in the manual fuel shut-off handle to allow fuel to flow to the engine.
f. Apply tape conforming to MIL-T-22085, type IV to the engine air intake openings located externally near the top rear roof section.
g. The following deprocessing instruction shall be marked on DA Form 2258: "MAIN ENGINE PRESERVED WITH PRESERVATIVE/LUBRICATING OIL MIL-L-21260. DO NOT CRANK" and "BEFORE CRANKING, REMOVE CAPS, TAPE, OR PLUGS FROM INTAKE, EXHAUST AND BREATHER OPENINGS."

3.4.2.1.1.2 Preservation through dipstick shroud opening and oil filler tube. Six ounces of preservative/lubricating oil conforming to MIL-L-21260, grade 30 shall be atomizer sprayed into the crankcase through the oil filler cap opening. Use an extension of sufficient length to permit the spray nozzle to be within the crankcase without being submerged in the crankcase oil. After atomizer spraying has been accomplished, the dipstick shall be reinstalled, the oil filler cap closed, and all openings to the engine interior, including dipstick shroud opening and oil filler cap shall be sealed with tape conforming to type IV of MIL-T-22085.

3.4.2.1.1.3 Preservation through main engine exhaust systems. Two ounces of preservative oil conforming MIL-P-46002, grade 1 shall be atomizer sprayed into the exterior exhaust openings. Seal the openings with tape conforming to type IV of MIL-T-22085. Then seal the engine crankcase breathers with plastic plugs conforming to MIL-C-5501 or with tape conforming to type IV of MIL-T-22085.

3.4.2.1.1.4 Auxiliary power unit. The APU engine crankcase shall contain preservative/ lubricant conforming to grade 30 of MIL-L-21260. The type and grade of preservative/lubricant shall be marked on DA Form 2258 together with the following deprocessing instructions: "THE APU ENGINE CRANKCASE IS FILLED WITH PRESERVATIVE/LUBRICANT GOOD UNTIL THE FIRST REQUIRED OIL CHANGE. DO NOT DRAIN. CHECK OIL LEVEL AND IF LOW, ELEVATE TO OPERATING LEVEL WITH PRESERVATIVE/LUBRICANT (MIL-L-21260, GRADE 30)." After the APU is operated to lower the boom, processing shall be in accordance with the following sequence of steps. It is essential to provide adequate ventilation while operating the APU engine.

3.4.2.1.1.4.1 Preservation of combustion chambers, valves and fuel system.

a. A preservative container assembly shall be prepared (see Figure 1). Position the selector valve to OFF. Add preservative/lubricating oil conforming to grade 10 of MIL-L-21260 to one compartment. Dye conforming to MIL-D-81298 shall also be added when inspection is required.
b. With the fuel pump switch on the instrument panel in OFF position, uncouple the quick disconnect on the fuel line to the fuel pump. Connect the preservative container assembly to the fuel pump (see Figure 16).
c. Disconnect the fuel line between the fuel pump and the primary fuel filter at the point closest to the primary fuel filter. Disconnect the fuel line between the secondary fuel filter and the fuel injection pump at the point closest to the secondary fuel filter. Connect the fuel line from the fuel pump to the fuel injection pump (see Figure 16).
d. Disconnect the fuel return line at the quick disconnect coupler. Connect the transparent plastic return line extension to the fuel return line. The opposite end of the transparent plastic return line extension shall be inserted into a clean/dry recovery container (see Figure 16).
e. Open the valve on the preservative container assembly to allow preservative to flow to the APU engine.
f. Start and idle the APU engine until remaining diesel fuel is flushed from the fuel lines and the engine is using preservative as fuel. Continue idling until half pint is collected in the recovery container. (The run time is approximately 1 minute 35 seconds.)
g. Stop APU engine and allow engine to cool to ambient temperature.

h. Disconnect the air intake hose from the air filter. Install an air restrictor over the opening on the air filter.
i. The start, preheat and fuel shut-off switches shall be placed in the ON position. Crank the engine for 20-seconds. Allow the starter to cool for not less than 1 minute. Repeat this procedure three times. Allow a 1 minute cooling period after each cranking of the APU engine. (Note: the engine may fire sporadically while being cranked with the air restrictor installed.)
j. The preservative container assembly valve shall be closed to stop flow of preservative. Disconnect the preservative container assembly from the fuel pump. The fuel line to the fuel pump shall be reinstalled.

3.4.2.1.1.4.2 Preservation of APU intake manifold. Remove the APU air cleaner cover and filter element. Remove the air restrictor from the air filter. Atomizer spray one ounce of preservative/lubricating oil conforming to grade 30 of MIL-L-21260 into the APU air intake duct. Seal the air intake opening with plastic plugs conforming to MIL-C-5501 or with tape conforming to type IV of MIL-T-22085. Reinstall the air filter element and air cleaner cover.

3.4.2.1.1.4.3 Preservation of APU exhaust manifold. Atomizer spray one ounce of preservative oil conforming to grade 1 of MIL-P-46002 into the APU exhaust opening. Seal the exhaust opening with plastic plugs conforming to MIL-C-5501 or with tape conforming to type IV of MIL-T-22085.

3.4.2.1.1.4.4 Preservation of APU crankcase through oil filler tube. Six ounces of preservative/lubricating oil conforming to grade 30, MIL-L-21260, shall be atomizer sprayed into the APU crankcase through the oil filler cap opening. Use an extension of sufficient length to permit the spray nozzle to be within the crankcase without being submerged in the crankcase oil. Maximum air pressure for spraying shall not exceed 25 pounds per square inch (psi). After spraying has been accomplished, the dipstick shall be reinstalled, the oil filler cap closed, and all openings to the engine interior including dipstick shroud opening and oil filler cap, shall be sealed with tape, type IV, MIL-T-22085. The following deprocessing instruction shall be marked on DA Form 2258: "AUXILIARY ENGINE PRESERVED WITH PRESERVATIVE/ LUBRICATING OIL, MIL-L-21260 AND MIL-P-46002. DO NOT CRANK" and "BEFORE CRANKING, REMOVE CAPS, TAPE, OR PLUGS FROM INTAKE, EXHAUST AND BREATHER OPENINGS."

3.4.2.1.1.5 Personnel heater and lines. The personnel heater shall have the fuel supply shut-off valve, located at the inlet side of the fuel filter, turned to the OFF position (see Figure 17). Disconnect the main fuel line supplying fuel to the heater at a point closest to shut-off valve. Connect the preservative container assembly (filled with preservative/lubricating oil conforming to grade 10 of MIL-L-21260 and, when inspection is required, dye conforming to MIL-D-81298) to the disconnected fitting at the fuel pump. Remove the fire extinguisher from its bracket and remove the air purifier box. This will allow access to the bleeder valve on heater.

Disconnect the electrical connector on the personnel heater. Attach a recovery line to the bleeder valve. Position a recovery container at the opposite end of heater bleed valve recovery line (see Figure 17). Position the selector valve on the preservative container assembly to allow for flow of preservative. Open the heater bleed valve. Open the fuel supply shut-off valve. Run the heater fuel pump until eight ounces are collected in the recovery container. Close the fuel supply shut-off valve. Close the heater bleed valve. Position the selector valve on the preservative container to stop flow of preservative. Disconnect the preservative container. Reconnect the fuel lines. Reconnect the electrical connector. Open the fuel supply shut-off valve. Seal the external exhaust opening with tape conforming to type IV of MIL-T-22085. The following deprocessing instruction shall be marked on DA Form 2258: "PERSONNEL HEATER FUEL LINES PRESERVED WITH PRESERVATIVE/LUBRICATING OIL, MIL-L-21260. REMOVE TAPE FROM EXHAUST OPENING."

3.4.2.1.2 Batteries, cables, and retainers.

3.4.2.1.2.1 Dry charged batteries and cables. Dry charged batteries (without electrolyte) shall be installed in the vehicle battery carrier. Battery cables shall be secured to the battery carrier with 0.75 inch-wide tape conforming to ASTM D5330/D5330M, type IV. The battery filler cap openings shall be sealed by placing a 2-inch wide by 3-mil thick piece of film conforming to type II of MIL-B-22191 over each filler cap opening with cap removed. The sheet shall be of sufficient length to allow it to be depressed into the opening by the filler cap. The filler caps shall be screwed or inserted into openings to form a complete seal without damaging the sheet.

3.4.2.1.2.2 Electrolyte. The electrolyte shall be packaged, packed, and marked as specified for type IV, class 1 in accordance with O-S-801. Shipping data and pack marking shall include the quantity, proper shipping name and identification of the hazardous material (see table IV). The packed electrolyte shall be stowed within the vehicle and secured independently to permit separate removal.

3.4.2.1.2.3 Stowing electrolyte. The electrolyte shall be stowed and secured to permit easy removal at ports where special stowing is required by maritime regulations. See Figure 12 for stowage location.

3.4.2.1.3 Power take-off clutch The power take-off shall be completely filled with lubricating oil conforming to MIL-L-2104 of the grade specified (see 6.2). The following deprocessing instruction shall be marked on DA Form 2258: "POWER TAKE-OFF COMPLETELY FILLED WITH OPERATING OIL, MIL-L-2104 (specify grade); DRAIN TO OPERATING LEVEL BEFORE PLACING IN SERVICE."

3.4.2.1.4 Reprocessing engines after loading or usage. If the main engine or APU is operated at any time during loading, unloading or for vehicle movement, the main engine and APU shall be reprocessed.

3.4.2.1.5 Lights and horn. Unless otherwise specified (see 6.2), the flasher lights, head lights, tail lights, spotlights, work lights and horn shall be covered with barrier material conforming to MIL-B-131 and secured with tape conforming to MIL-T-22085, type IV.

3.4.2.2 Level B. When Level B processing is specified, the following special procedures and operations are required:

3.4.2.2.1 Fuel tanks. Unless another volume of fuel is specified (see 6.2), each vehicle shall be shipped with minimum 75 gallons and maximum (one-fourth tank) of 100 gallons of fuel, grade F-34 (JP-8), of MIL-T-83133 in the fuel tank. Vehicle shipment data shall include the quantity, proper shipping name and identification of hazardous materials aboard the vehicle (see table IV).

3.4.2.2.1.1 Special fuel volume. When specified, an increased volume of fuel shall be placed in the fuel tank (see 6.2). For fuel volume exceeding 100 gallons (one-fourth tank), additional hazardous material shipping requirements apply. See CFR Title 49 for requirements when fuel capacity exceeds one-fourth tank.

3.4.2.2.1.2 Special fuel type. When specified, an alternate fuel shall be placed in the fuel tank (see 6.2). DA Form 2258 shall be marked to indicate the alternate fuel used.

3.4.2.2.2 Batteries, cables, and retainers. Batteries, cables, and retainers shall be installed. Batteries shall be filled with electrolyte and fully charged. Unless otherwise specified (see 6.2) the batteries shall be disconnected and the cable ends shall be secured from contact to the terminals using cable ties or tape conforming to ASTM D5330. A tag stating "BATTERIES ARE DISCONNECTED", shall be placed in the driver's compartment. Vehicle shipment data shall include the quantity, proper shipping name and identification of hazardous materials aboard the vehicle (see table IV).

3.4.2.2.3 Air intake and exhaust systems. The air intake and air cleaner shall be assembled and prepared for vehicle operation. Exhaust system shall be prepared for vehicle operation and shall not be sealed.

3.4.2.2.4 Power take-off clutch. The power take-off shall be filled to operational level with normal operational lubricant as specified in the technical manual (see 6.2). DD Form 2258 shall be annotated to indicate grade of lubricant used.

3.4.2.2.5 Main engine and APU engine crankcases. The main engine crankcase and APU engine crankcase shall be each filled to operating level with lubricant conforming to the specified grade of MIL-L-2104 (see 6.2).

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2).
b. Conformance inspection (CI) (see 4.3).

4.2 First article inspection. First article inspection shall be performed at the contractor's facilities or at other facilities acceptable to the Government on sample vehicles processed with materials, equipment, procedures, and operations normally used in production (see 3.1).

4.2.1 Sample. One of the first 10 production vehicles processed to each level of protection shall be subjected to first article inspection. The sample processed vehicle(s) shall have been subjected to and passed the requirements of CI (see 4.3).

4.2.2 Inspection routine. Sample vehicles shall be inspected in accordance with 4.3 for conformance to the requirements of table V.

4.2.3 Failure. Failure of a sample processed vehicle to meet CI requirements or failure of a sample processed vehicle to meet first article inspection requirements specified in table V shall be cause for rejection.

4.3 CI. CI shall be performed at the contractor's facilities or at other facilities acceptable to the Government on each lot of processed vehicle.

4.3.1 Inspection lot. The inspection lot shall be defined as one vehicle and shall consist of each vehicle processed to the specified level of protection.

4.3.2 Inspection routine. Each processed vehicle shall be subjected to the CI in table V.

4.4 Methods of inspection.

4.4.1 First article inspection of Level A fuel system processing. For first article inspection, the fuel system, including the fuel lines, fuel pump, and engine, shall be disassembled to the extent necessary to permit visual examination of preserved surfaces. Exposed surfaces shall have a coating of preservative. Oil soluble red dye conforming to MIL-D-81298 shall be dissolved in the preservative to permit visual examination of preserved surfaces.

4.4.2 First article inspection of disassembled component and support items. For first article inspection, the method of preservation for component and support items shall be inspected in accordance with table I, table II, table III and MIL-STD-2073-1. Inspection of the methods of preservation shall include cleaning, preservation, packaging, and marking. Rough handling testing shall apply only to exterior containers.

4.4.2.1 CI of component and support items. For CI, the method of preservation for component and support items shall be inspected in accordance with the quality assurance provisions specified in MIL-STD-2073-1. Inspection of the methods of preservation shall include cleaning, preservation, packaging, and marking.

4.4.3 CI of processing. The vehicle processing shall be inspected visually for conformance to the requirements listed in table V.

4.4.3.1 Materials. Except for materials which have been inspected by the Government at source, all materials to be used in processing of vehicles shall be inspected in accordance with the material specification; or certified inspection and laboratory test reports shall be provided which show that furnished materials conform to the detailed specifications. When materials are listed on a Qualified Products List (QPL), they shall be obtained from one of the approved sources indicated.

4.4.3.2 Cleaning. To determine conformance to 3.4.1.2.1, the interior of the vehicles shall be examined for cleanliness. One vehicle each day shall be tested for cleanliness in accordance with the applicable provisions of MIL-STD-2073-1. To determine conformance to 3.4.1.2.2, the exterior of the vehicle shall be examined for cleanliness. Surfaces to which tape is to be applied shall be examined for cleanliness before application.

4.4.3.3 Fuel tank. To determine conformance to 3.4.2.1.1, visual inspection of the fuel tank interior shall assure that complete specified processing has been accomplished.

4.4.3.4 Engine. To determine conformance to 3.4.2.1.1, the engine from 1 of the first 10 production processed vehicles shall be examined for surface coverage of preservative with red dye. The engine fuel lines shall be disassembled to the extent necessary for visual examination of surfaces.

5. PACKAGING

This section is not applicable to this specification.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This document specifies processing of the M88A2 Heavy Recovery Vehicle for shipment and storage. This document is cited in a contract or purchase order to obtain protection from known or anticipated conditions of shipment, handling, and storage.

6.1.1 Use of Level A, maximum protection. Maximum protection, called Level A, is processing for the most severe conditions of shipment, handling, and storage. Maximum protection should be applied to protect vehicles where the period of shipment, handling, and storage will exceed 90 days from the date of processing. Level A protection should be applied for long-term open storage and for deck loaded marine shipment.

6.1.2 Use of Level B, intermediate protection. Intermediate protection, called Level B, is processing for known favorable conditions of shipment, handling, and storage. Intermediate protection should be applied when Level A protection is not required and when the period of shipment, handling, and storage will not exceed 90 days from the date of processing. Level B protection should be applied for domestic shipment and known favorable overseas shipment excluding marine deck loading.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Applicable level of protection (see 1.2 and 3.4.2).
c. Issue of DoDISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3).
d. If first article inspection is required (see 3.1).
e. The mode(s) of transport and transportability guidance if shipment by special transport mode is required (see 3.4.1.1.1 and 3.4.1.1.2).
f. If access covers and gaskets should not be removed (see 3.4.1.1.3).
g. If vehicle surfaces and components should be preserved other than as specified (see 3.4.1.3).
h. The grade of lubricating oil specified in the technical manual for the transmission assembly and final drives (see 3.4.1.3.3).
i. The grade of lubricating oil specified in the technical manual for the winch gearcases (see 3.4.1.3.8.1).
j. If packaging or packing of component and support items should be other than as specified (see 3.4.1.4 and 3.4.1.5).
k. If special marking is required (see 3.4.1.6).

l. If separate shipment of component and support items should be coordinated with the receiving activity to accommodate transport weight limits (see 3.4.1.6.1, 3.4.1.7, 3.4.1.7.2 and 3.4.1.7.3).
m. If ventilation is other than as specified (see 3.4.1.8.1).
n. Special requirements for processing when specified (see 3.4.2).
o. If a red dye and preservative is required for inspection (see 3.4.2.1.1.b.1).
p. The grade of lubricating oil specified in the technical manual for the power take-off clutch (see 3.4.2.1.3 for Level A)(see 3.4.2.2.4 for Level B).
q. If lights and horn should not be covered for level A processing (see 3.4.2.1.5).
r. If fuel volume is other than as specified (see 3.4.2.2.1).
s. If another type of fuel is required (see 3.4.2.2.1.2).
t. If the battery cables should not be disconnected from the battery terminals (see 3.4.2.2.2).
u. The grade of lubricating oil for level B processing of the main engine and APU engine crankcases (see 3.4.2.2.5).

6.2.1 Safety precaution. Caution should be exercised in handling fire extinguisher cylinders, acetylene cylinder and oxygen cylinder. Cylinders should not be dropped, permitted to strike each other, or handled roughly. Extreme care should be exercised to avoid tripping the fire extinguisher control trigger (see 3.4.1.3.11).

6.3 Definitions.

6.3.1 Recovered materials. "Recovered materials" means materials that have been collected or recovered from solid waste (see 6.3.2).

6.3.2 Solid waste. "Solid waste" means (a) any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; and (b) other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, mining, commercial, and agricultural operations, and from community activities. It does not include solid or dissolved material in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Clean Water Act (33 U.S.C. 1342 et seq.), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (24 U.S.C. 2011 et seq.) (source: Federal Acquisition Regulations, section 23.402).

6.4 Supplemental publications. MIL-HDBK-129 provides general information on military marking and should be used to provide guidance for the utilization of MIL-STD-129 (see 3.4.1.6). Copies of MIL-HDBK-129 are available from Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.5 Subject term (key word) listing:

Atomizer
BII
Closure
COEI
Container
Loading
Packaging
Packing
Preservation
Stowage

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

TABLE I. Disassembled items.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
5340-00-709-9733	1	Access Cover - Place each in carton	3	10	Figure 16
5340-00-709-9727	2	Access Cover - Place in carton	1	10	Figure 16
5340-00-887-8937	3	Access Cover - Place in carton	1	10	Figure 16
5330-00-613-6828	4	Access Cover Gasket - Sandwich each between two stiffeners	3	30	Figure 16
5330-00-887-8936	5	Access Cover Gasket - Sandwich between two stiffeners	1	30	Figure 16
5330-00-693-3735	6	Access Cover Gasket - Sandwich between two stiffeners	1	30	Figure 16
	7	Access Cover Hardware O/E consisting of:	60	10	Figure 16
MS35338-46	7A	(lock washers)	(30)		
B1821BH038C175N	7B	(bolts)	(30)		
2540-00-087-0199	8	Personnel Seats - Wrap each with MIL-B-121	2	10	Figure 16
5306-01-297-2749	9	Eye Bolts (from hydraulic reservoir) - Wrap each with MIL-B-121	2	10	Figure 16
5985-01-353-4943	10	Radio Antenna AS-3916/VRC - Cushion with PPP-C-1797 in carton.	1	10	Figure 16
MS20913-4S	11	Drain Plug - Combine into one bag	2	10	Figure 16

TABLE II. Component and support items (Basic Issue Items).
The "Item" column coincides with the numerical listing found in the TM 9-2350-292-10.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
4930-00-288-1511	1	Adapter, Extension, Hydraulic Gun Tube, Flex 12" Long - Bag Item	1 EA	31	Box 2
4930-00-204-2550	2	Adapter, Thin Stem Gun, Lubricating, Sleeve Type - Bag Item	1 EA	10	Box 2
5120-00-340-2013	3	Adapter, Socket Wrench, 3/4" Square Drive (used to attach impact wrench to track fixture) - Wrap with MIL-B-121	2 EA	20	Box 2
2590-01-431-1220	4	Auxiliary Boom (1000 lb. limit) - Identify with tag and bolt onto vehicle.	1 EA	10	Figure 17
5110-00-293-2336	5	Axe, Single Bit, 4 lb. - Cushion with A-A-1051	1 EA	10	Box 6
5140-00-473-6256	6	Bag, Tool, Satchel - Bag Item	1 EA	31	Box 2
5120-00-224-1390	7	Bar, Crow, Pinch, 5' Long, 1-1/4" Wide - Wrap with MIL-B-121	2 EA	10	Box 6
3990-01-235-0367	8	Binder, Torque, Track - RSC size: 15-1/2 x 10 x 4-3/4	1 EA	20	Box 4
OR	OR	OR			
3990-01-091-9058	8	Binder, Torque, Track - RSC size: 15-1/2 x 10 x 4-3/4	1 EA	20	Box 4
2540-01-423-1792	9	Block Assembly, Lockout - Identify with tag	2 EA	10	Box 3
12366425 (06085)	10	Chain Hoist - Identify with tag	1 EA	10	Box 3
3940-01-429-8206	11	Block, Hook, 35-Ton -Tag item and block/brace as shown	1 EA	10	Figure 17
3940-01-421-6962	12	Block, Snatch, 140-Ton - Tag item and block/brace into Box 3	1 EA	10	Box 3
12366387 (06085)	13	Block, Snatch, 6.5-Ton - RSC size: 13-1/2 x 6-1/2 x 4	1 EA	10	Box 3
4010-01-421-2793	14	Cables, Tow, Steel, 1-1/2" Diameter, 15' - Identify with tag and bolt onto vehicle	2 EA	20	Figure 17
7240-00-222-3088	15	Can, Gasoline, Military 5 Gallon - Identify with tag and stow in vehicle	2 EA	20	Figure 16
7240-00-242-6153	16	Can, Water, Military 5 Gallon - Identify with tag and stow in vehicle	2 EA	10	Figure 16
4001-00-133-6517	17	Chain, Lifting, Heavy Duty 7/8" - Identify with tag and bolt onto vehicle	1 EA	20	Figure 17

TABLE II. Component and support items (Basic Issue Items) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
3439-00-383-3634	18	Cleaner Set, Welding & Cutting Tips, 12 Pieces in Metal Case - Bag Item	1 EA	10	Box 2
5340-01-267-2908	19	Clevis, M1 - RSC size: 7-3/4 x 5 x 4	4 EA	10	Box 2
5110-00-188-2524	20	Cutter, Bolt, Rigid-Head, Clipper Cut 5/8" Bolt & 9/16" Rod Capacity, 36" - OPF size: 36-1/2 x 6 x 2	1 EA	10	Box 6
6830-00-292-0137	21	Cylinder, Compressed Gas "Acetylene" - Identify with tag and bolt into holder	1 EA	N/A	Figure 16
6830-00-292-0129	22	Cylinder, Compressed Gas "Oxygen" w/Valve and Cap Filled - Identify with tag and bolt into holder	1 EA	N/A	Figure 17
4210-00-270-4512	23	Extinguisher, Fire Portable, 5-lb. CO2 - FOL size: 8 x 6 x 19 (standing upright)	2 EA	10	Figure 16
6545-00-922-1200	24	First Aid Kit, Motor Vehicle, 12 Unit, Size 1 - RSC size: 8-3/4 x 6 x 3-1/2	2 EA	10	Box 1
5120-01-016-2149	25	Fixture, Track Connecting, 3/4" Drive - FOL size: 8-3/4 x 4-3/4 x 24	2 EA	20	Box 4
5120-00-965-0603	26	Flint Tip, Friction Igniter, w/holder 6/box - Bag Item	1 BX	10	Box 2
7240-00-559-7364	27	Funnel, S, Zinc Coated, 1 Qt. (8-Inch Flex. Spout With Removable Strainer) - FOL size: 5 x 5 x 18-1/2	1 EA	10	Box 2
8415-00-268-7870	28	Gloves, Leather, Work w/o Gauntlet - Bag Item	3 PR	31	Box 2
8415-00-268-7859	29	Gloves, Welding Leather Gauntlet, Size Large - Bag Item	1 PR	31	Box 2
4240-00-203-3804	30	Goggles, Industrial Welding w/Eye Cups, w/o Case - Bag Item	1 PR	31	Box 2
4930-00-766-3545	31	Grease Gun, Hand, High Pressure, 21 Oz. -RSC size: 22 x 4-1/2 x 2-3/4	2 EA	10	Box 5
5120-00-288-6574	32	Handle, Mattock, 36" Long, Grade AA - Cushion with A-A-1051	1 EA	10	Box 6
2540-00-706-8219	33	Hook, Tow Cable - RSC size: 6-1/2 x 4-1/4 x 4	4 EA	10	Box 1
4720-00-273-9886	34	Hose, Gas, "Acetylene" Red, w/Coupling, 5/16" x 50' - RSC size: 16 x 16 x 3-1/2 around bag	1 EA	31	Box 5

TABLE II. Component and support items (Basic Issue Items) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
4720-00-293-7997	35	Hose, Gas, "Oxygen", Green w/Coupling, 5/16" x 50' - RSC size: 16 x 16 x 3-1/2 around bag	1 EA	31	Box 5
4720-00-792-9883	36	Hose, Hydraulic, Impact Wrench, 1/2" x 25' - RSC size: 18 x 18 x 3-3/4 around bag	2 EA	31	Box 2
4720-00-792-9884	37	Hose, Hydraulic, Impact Wrench, 3/8" x 25' - RSC size: 16-1/2 x 15-1/2 x 3-1/2	2 EA	31	Box 1
5120-00-965-0326	38	Igniters, Friction, Wire Frame Style, Single Flint - Bag Item	1 EA	10	Box 2
5120-00-188-1790	39	Jack, Hydraulic, Hand, 30-Ton With Operating Handle - FOL size: 7-3/4 x 7 x 11-3/4	1 EA	10	Box 1
2590-00-148-7961	40	Kit, Slave Cable, Special Purpose - RSC size: 16-1/2 x 15-1/2 x 5-1/2	1 EA	10	Box 1
6675-00-641-3163	41	Level, Surveying - FOL size: 3-1/2 x 3 x 8-1/2 around bag	1 EA	31	Box 2
5120-00-243-2395	42	Mattock, Pick, w/o Handle - Cushion with A-A-1051	1 EA	10	Box 6
8415-01-092-0039	43	Mittens, Asbestos, M1942 - Bag Item	2 PR	31	Box 2
1005-00-836-7286	44	Mount, Machine Gun Caliber .50 - RSC size: 16 x 10-1/4 x 15-1/2 w/pads	1 EA	20	Box 4
2590-00-861-9982	45	Nozzle & Fuel Hose Assy - RSC size: 24 x 19 x 7-1/2	1 EA	10	Box 5
4930-00-262-8868	46	Oiler, Hand Type 1 - FOL size: 8 x 5 x 18-1/2	1 EA	10	Box 2
5315-00-706-9195	47	Pin, Tow Cable Hook - Wrap with MIL-B-121	8 EA	10	Box 2
5120-00-239-8251	48	Pliers, 8" - Bag Item	1 EA	33	Box 2
5120-00-277-4244	49	Wrench, Pliers, 1-3/4" Opening - Bag Item	1 EA	10	Box 2
5120-01-052-5642	50	Puller & Pump, Track End Connector - RSC size: 21-1/2 x 11-1/4 x 7-1/8 w/pads	1 EA	20	Box 5
4820-00-281-8190	51	Regulator, Pressure, Compressed Gas, Acetylene - RSC 7 x 6-1/2 x 6-1/2 with PPP-C-1797	1 EA	31	Box 4

TABLE II. Component and support items (Basic Issue Items) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
4820-00-281-8191	52	Regulator, Pressure, Compressed Gas, Oxygen - RSC 7 x 6-1/2 x 6-1/2 with PPP-C-1797	1 EA	31	Box 5
4020-01-204-7039	53	Rope, Fibrous, 100’ - RSC size: 24 x 10-3/4 x 7-3/4	1 EA	10	Box 5
5120-00-293-3336	54	Shovel, General Purpose - Cushion with A-A-1051	1 EA	10	Box 6
5120-00-900-6097	55	Sledge, Blacksmith, Double-Face, 10 lb. - Cushion with A-A-1051	1 EA	10	Box 6
3940-00-675-5002	56	Sling, Endless, 4 Ft. PD101-48 - Bag Item	1 EA	10	Box 2
5130-00-964-9113	57	Socket, Socket Wrench, Power Drive, 6 Point, Thin Wall, 1-1/4 Opening - Wrap with MIL-B-121	1 EA	20	Box 2
5130-01-084-6025	58	Socket, Socket Wrench, Power Drive, 6 Point, Thin Wall, 1-5/16” Opening (used on track center guide nut) - Wrap with MIL-B-121	1 EA	20	Box 2
7240-00-177-6154	59	Spout, Can, Flex Nozzle - Wrap with MIL-B-121	2 EA	10	Box 2
TM 9-2350-292-10	60	Technical Manual, Operator’s, Maintenance - Bag Item	1 EA	31	Box 2
5140-00-498-8772	61	Tool Box, Portable - RSC size: 21-3/8 x 9-3/4 x 8 w/pads	1 EA	10	Box 1
4710-00-792-9886	62	Tube, Filler, Nozzle, 34” Long - PPP-C-1797 in FOL size: 3 x 3 x 36	1 EA	10	Box 6
9905-00-534-8376	63	Warning Device Kit, Reflector Type w/Flags - RSC size: 5 x 5 x 19	1 EA	10	Box 4
OR	OR	OR			
9905-00-148-9546	63	Highway Warning Device Set, Portable - RSC size: 4-1/2 x 3 x 18	1 EA	10	Box 4
3433-00-294-6743	64	Torch Set, Acetylene & Oxygen, Med. Duty w/Wrench, 5 Weld and 3 Cut Tips - FOL size: 4 x 4 x 12	1 EA	10	Box 1

TABLE II. Component and support items (Basic Issue Items) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
2540-00-267-2912	65	Tow Bar Assembly - Identify with tag and bolt onto vehicle COMPOSED OF: Leg, Tow Bar Lunette, Tow Bar Pin, Locking (R-Clip) Pin, Large 2” Pin, Small 1.4”	2 EA 2 EA 1 EA 3 EA 2 EA 1 EA	10	Figure 17
5315-00-539-9174 5315-00-350-4326		Pin (Removed From Tow Bar Assy) -Bag each item Pin, Locking	4 EA 4 EA	10	Box 2
5130-00-790-2284	66	Wrench, Hydraulic, Impact - RSC size: 21-1/2 x 9-1/2 x 4	1 EA	20	Box 4
5130-00-357-5135	67	Wrench Set, Socket 3/4” Square Drive, 6 Point, Heavy-Duty, w/Case & Extension Bars, 9/16” to 1-1/2” Opening, 16 Pieces - RSC size: 21-1/2 x 6-1/4 x 5-1/2	1 EA	20	Box 4
5120-00-204-1999	68	Wrench Set, Socket 3/4” Square Drive, 12 Point W/Case 7/8” to 2” Opening, 21 PCS. - FOL size: 9-3/4 x 3-5/8 x 27-3/4	1 EA	20	Box 4
5120-00-277-9076	69	Wrench, Spanner - Bag Item	1 EA	33	Box 2
5120-00-494-1929	70	Wrench, Torch & Regulator, Acetyl & Oxy - Bag Item	1 EA	33	Box 2
5120-00-624-8065	71	Pliers, Slip-Joint - Bag Item	1 EA	10	Box 2

TABLE III. Component and support items (Component Of End Item).

The “Item” column coincides with the numerical listing found in the TM 9-2350-292-10.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
2450-00-670-2459	1	Bag, Pamphlet - OPF size: 11-1/2 x 8 x 1 around bag	1 EA	31	Box 8
7510-00-738-6164	2	Binder, Loose-Leaf (for Manuals) - Bag Item	2 EA	10	Box 8
4010-00-473-6166	3	Chain, Utility, 5/8” x 16’, Single Leg w/Hook and End Link - Identify with tag and bolt onto vehicle	2 EA	20	Box 8
7530-01-065-0166	4	Folder, Equipment Record - Bag Item	1 EA	10	Box 8
TM 9-5130-338-12&P	5	Manual, Technical Hydraulic Impact Wrench	1 EA	31	Box 8

TABLE III. Component and support items (Component Of End Item) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
5340-00-682-1505	6	Padlock Set, 1-3/4" (5 locks/set) - PPP-B-566, size: 4 x 3 x 1-1/2	2 EA	10	Box 8
2540-00-653-7589	7	Paulin, Cotton Duck - Bag Item	1 EA	10	Box 8
6650-00-704-3549	8	Periscope, M17 (T24) - Cushion with PPP-C-1797 w/in bag	7 EA	31	Box 8
5315-00-350-4326	9	Pin, Locking, Quick attach - Bag Item	20 EA	10	Box 8
5120-00-227-7338	10	Screwdriver, Flat Tip - Bag Item	1 EA	33	Box 8
4030-00-377-1389	11	Shackle, Anchor, High Strength, 2" Dia. - Identify with tag	4 EA	10	Box 8
4030-01-433-2301	12	Shackle, 12-1/2 Ton - Cushion in A-A-1051 and tag	6 EA	10	Box 7
4030-01-420-8863	13	Shackle, 21 Ton - Cushion in A-A-1051 and tag	2 EA	10	Box 7
4030-01-420-8862	14	Shackle, 50 Ton - Identify with tag	4 EA	10	Box 7
5866-01-096-0871	15	Viewer, Passive Night AN-VVS-2(V) 1A - Cushion with PPP-C-1797 within bag	1 EA	41	Figure 16
5120-00-243-9072	16	Vise, Bench & Pipe, 5" Jaw &6" Opening - Identify with tag and bolt onto vehicle	1 EA	20	Figure 17
5120-00-264-3793	17	Wrench, Adjustable, 15" Long - Wrap with MIL-B-121	1 EA	10	Box 8
5120-00-240-1414	18	Wrench, Adjustable, 18" Long - RSC size: 18-1/2 x 4-3/4 x 1	1 EA	10	Box 8
		On Board Spares			
5306-00-538-0854	19	Bolt, Support Roller - Package 12 EA as bags within a carton	12 EA	10	Figure 16
5310-00-225-6408	20	Nut, Sprocket Bolt - Package 28 EA as bags within a carton	28 EA	10	Figure 16
5310-01-064-3910	21	Nut, Road Wheel - Package 20 EA as bags within a carton	20 EA	10	Figure 16
2530-00-692-9316	22	Shoe, Track Section (Each) Composed of 23 through 30	6 EA	20	Box 8
5306-00-706-9543	23	Bolt; (used w/Ctr Guide Cap) - Package 6 EA as bags within a carton	1 EA		
5306-00-695-6188	24	Bolt; Track Shoe End Conn Wedge - Package 12 EA as bags within a carton	2 EA		
2530-00-692-9314	25	Cap; Track Shoe CTR Guide - Wrap each w/MIL-B-121 into a carton	1 EA		

TABLE III. Component and support items (Component Of End Item) - Continued.

Identification Number	Item	Item Description	Qty	Method of Pres.	Stowage Location
2530-00-692-9317	26	Connector; Track Shoe End - Wrap each w/MIL-B-121 into a carton	2 EA		
2530-00-692-9315	27	Guide; Track Shoe Center - Wrap each w/MIL-B-121 into a carton	1 EA		
8705899 (19207)	28	Link Track - Identify with tag	1 EA		
5310-01-006-2085	29	Nut: (used w/Ctr Guide Cap) - Package 6 EA as bags within a carton	1 EA		
2530-00-039-9153	30	Wedge; Track Shoe - Package 12 EA as bags within a carton	2 EA		
3020-00-293-5136	31	Sprocket Wheel - Identify with tag and bolt onto vehicle	2 EA	10	Figure 17
2530-00-701-3976	32	Wheel, Solid Rubber - Identify with tag and bolt onto vehicle	2 EA	10	Figure 17
2530-00-293-5137	33	Wheel, Solid Rubber - Identify with tag and bolt onto vehicle	2 EA	10	Figure 17
4730-00-050-4208	34	Fitting, Lubrication - Bag Item	10 EA	10	Box 8
6240-10-368-4972	35	Lamp, Incandescent - Cushion and bag item	2 EA	10	Box 8

TABLE IV. Hazardous materials.

Proper Shipping Name	Hazardous Material Identification	Qty./Vehicle (Level A)	Qty./Vehicle (Level B)
Kerosene (Fuel)	UN1223, CL 3 (Flash Point 100°F) COMBUSTIBLE LIQUID	Empty	100 gals. max.
Acetylene, Dissolved (1 Mounted Cylinder)	UN1001, CL 2.1 FLAMMABLE GAS	190 cu. ft.	190 cu. ft.
Oxygen, Compressed (1 Mounted Cylinder)	UN1072, CL 2.2 NON-FLAMMABLE GAS, OXIDIZER	252. cu. ft.	252 cu. ft.
Fire Extinguisher, Portable (2 Cylinders)	UN1044, CL 2.2 NON-FLAMMABLE GAS (CO_2)	5 lb./cyl. (10 lb. total)	5 lb./cyl. (10 lb. total)
Fire Extinguisher, Mounted (4 Cylinders)	UN1013, CL 2.2 NON-FLAMMABLE GAS (CO_2)	26 lb./cyl. (104 lb. total)	26 lb./cyl. (104 lb. total)
Battery (Electrolyte) (6 Mounted and Secured)	UN2794, CL 8 (Battery Wet, Filled With Acid) CORROSIVE **OR** UN2796, CL 8 (Battery Fluid, Acid) CORROSIVE	**Dry** (9 gallons of electrolyte packaged separately)	**Wet** (6 qt. electrolyte per battery)

TABLE V. First article inspection and CI.

Level	Inspection	Requirement Paragraph	Inspection Method Paragraph
a.	First Article Inspection:		
	Fuel System (Level A) Preservation	3.4.2.1.1	4.4.1
	Component and Support Items Packaging	3.4.1.4	4.4.2
	Component and Support Items Stowage	3.4.1.7.1	4.4.2
b.	Conformance Inspection:		
	Disassembly	3.4.1.1	4.4.3
	Cleaning and Drying	3.4.1.2	4.4.3/4.4.3.2
	Preservation	3.4.1.3	4.4.3
	Packaging	3.4.1.4	4.4.2.1/4.4.3
	Packing	3.4.1.5	4.4.3
	Marking	3.4.1.6	4.4.3
	Stowage	3.4.1.7	4.4.3
	Closure	3.4.1.8	4.4.3
	Loading	3.4.1.9	4.4.3

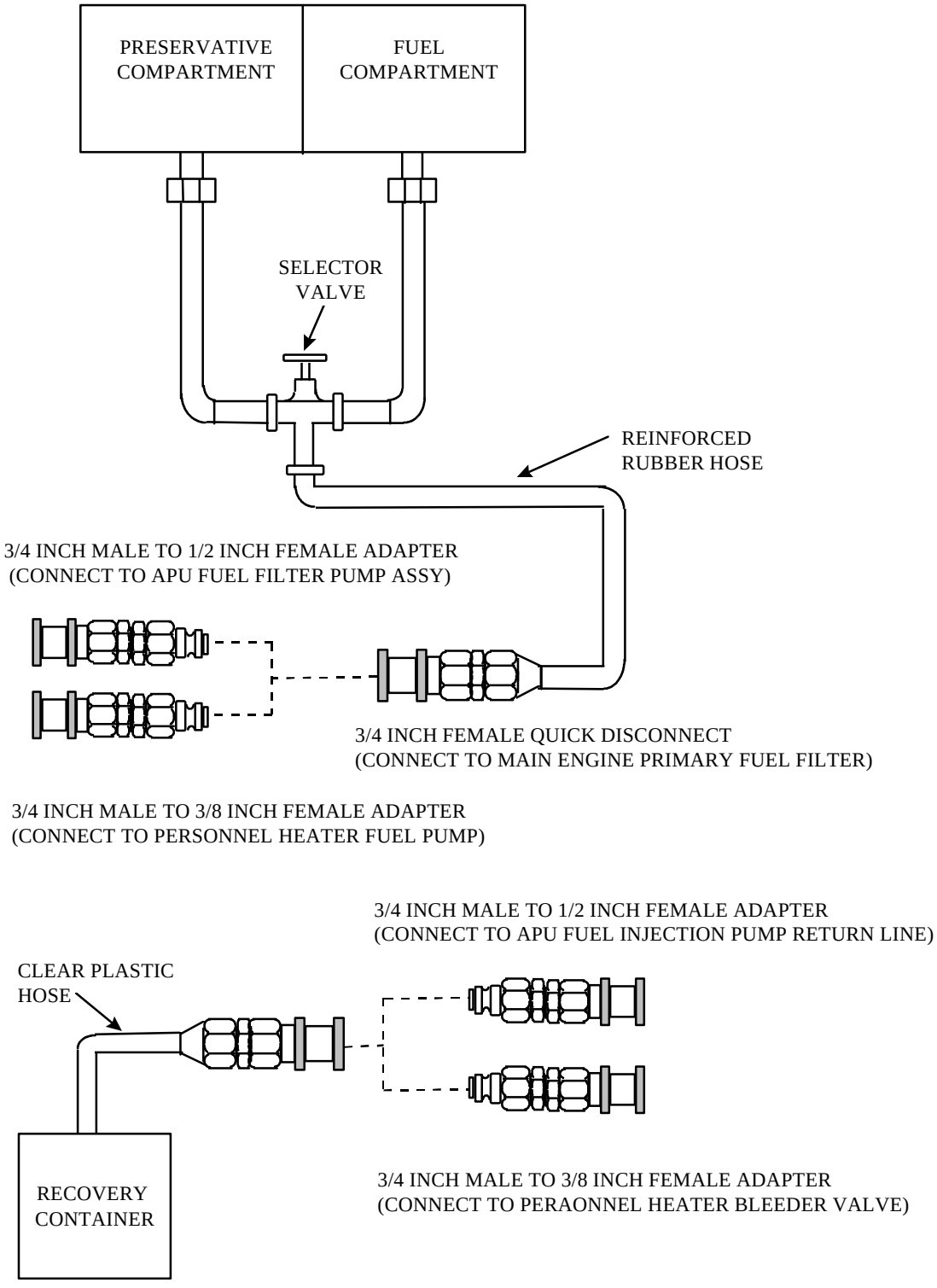


FIGURE 1. Preservative Container Assembly and Recovery Container Assembly.

AIR RESTRICTOR SPECIFICATIONS

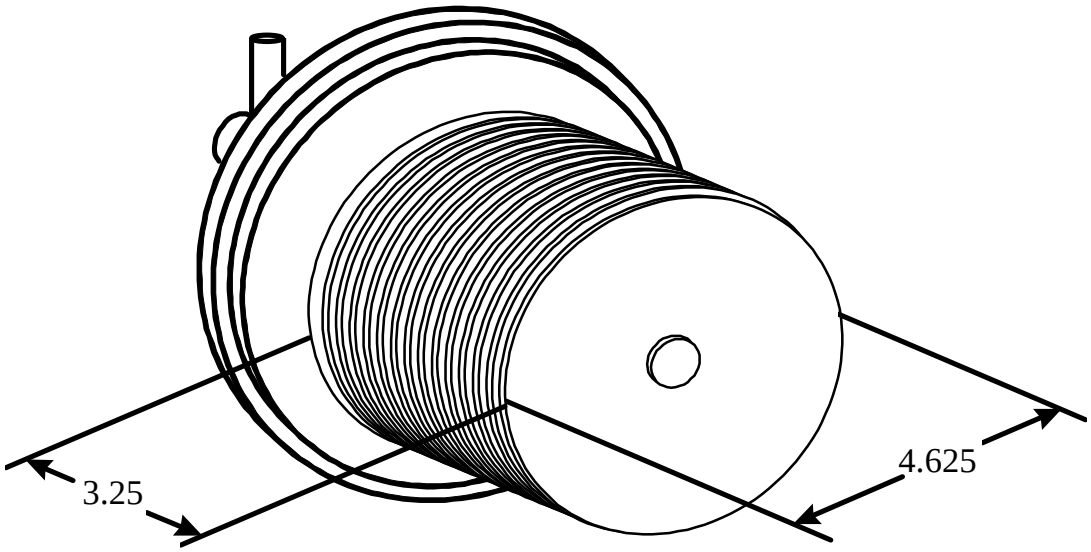


FIGURE 2. Air Restrictor For APU.

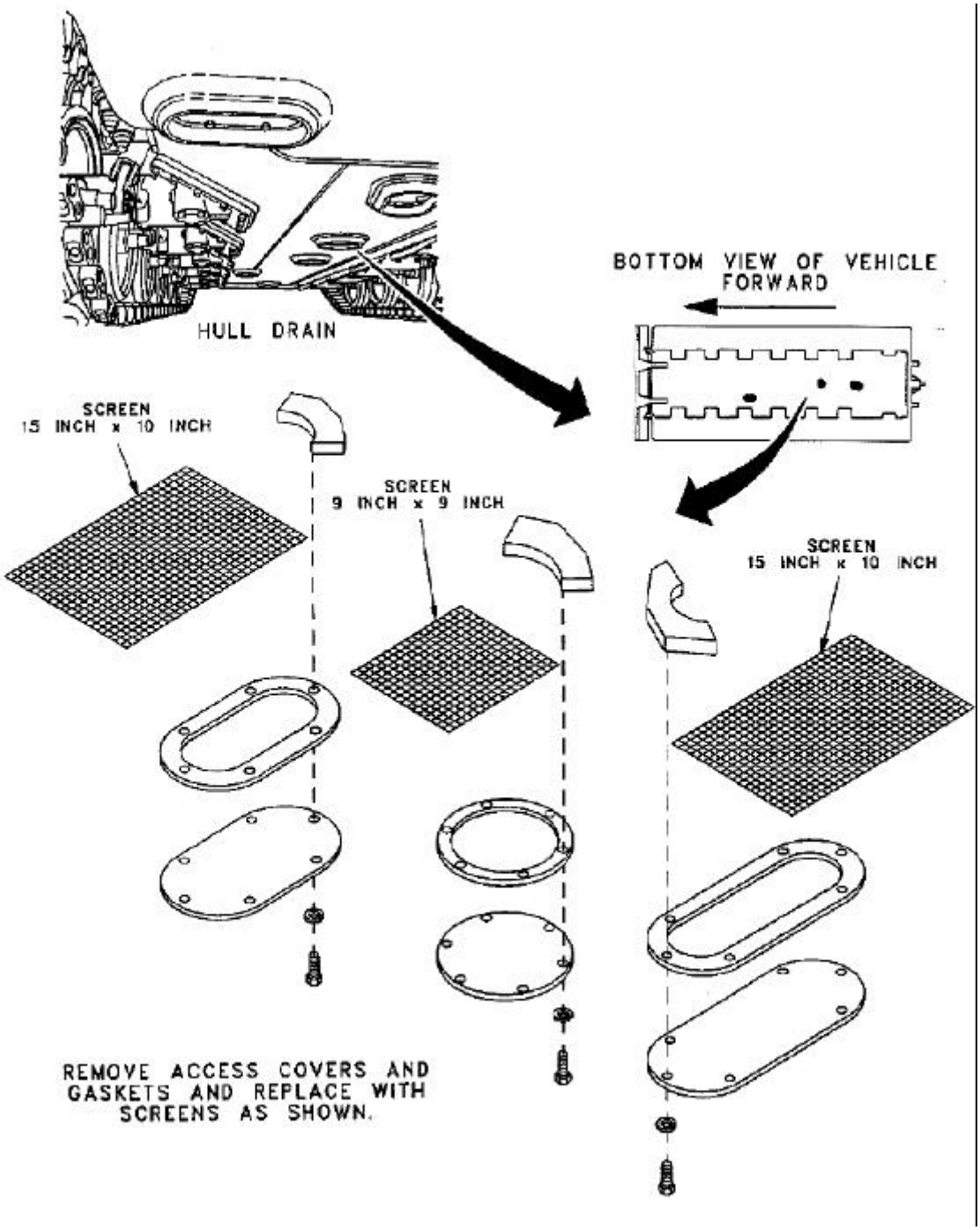
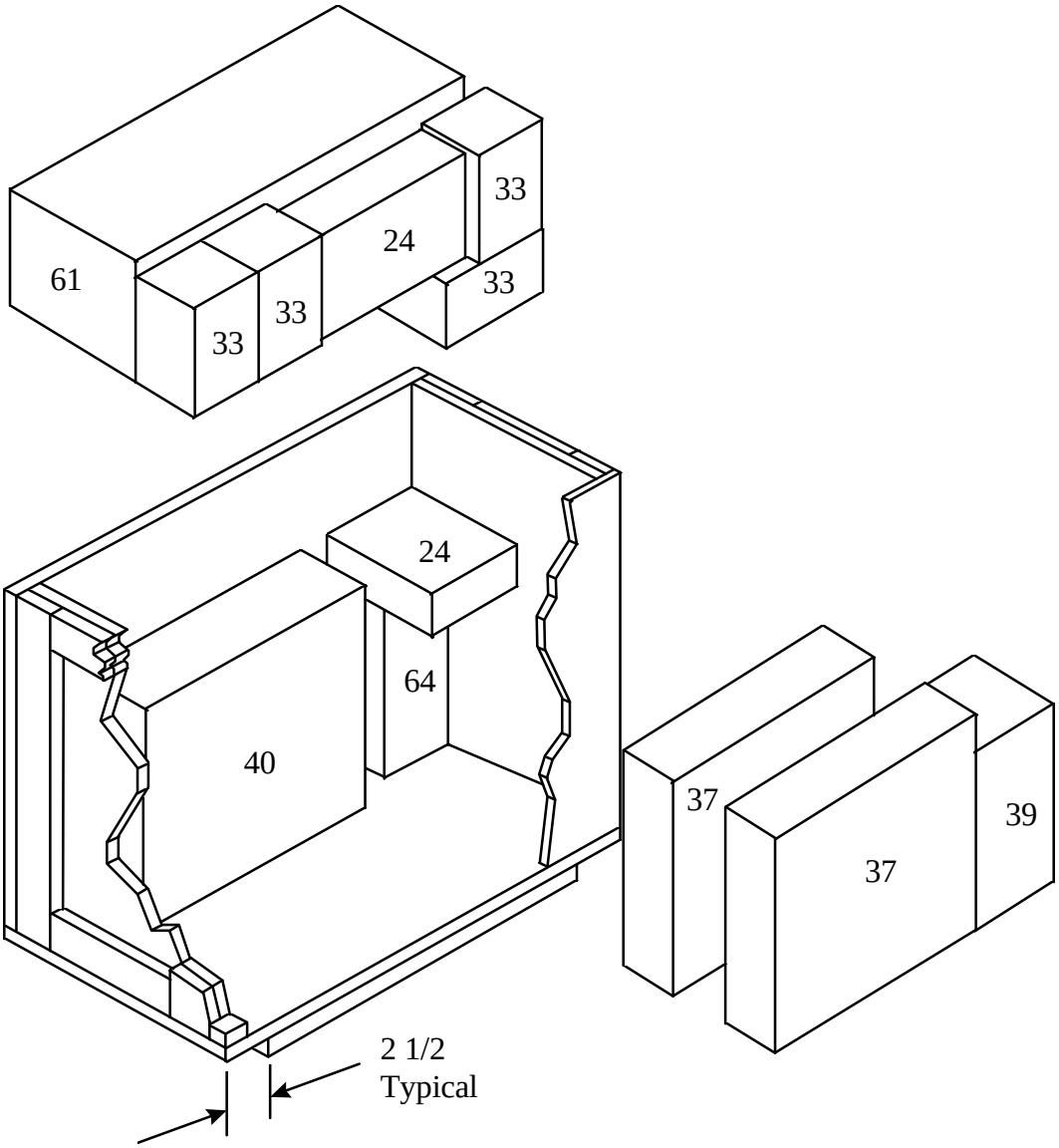


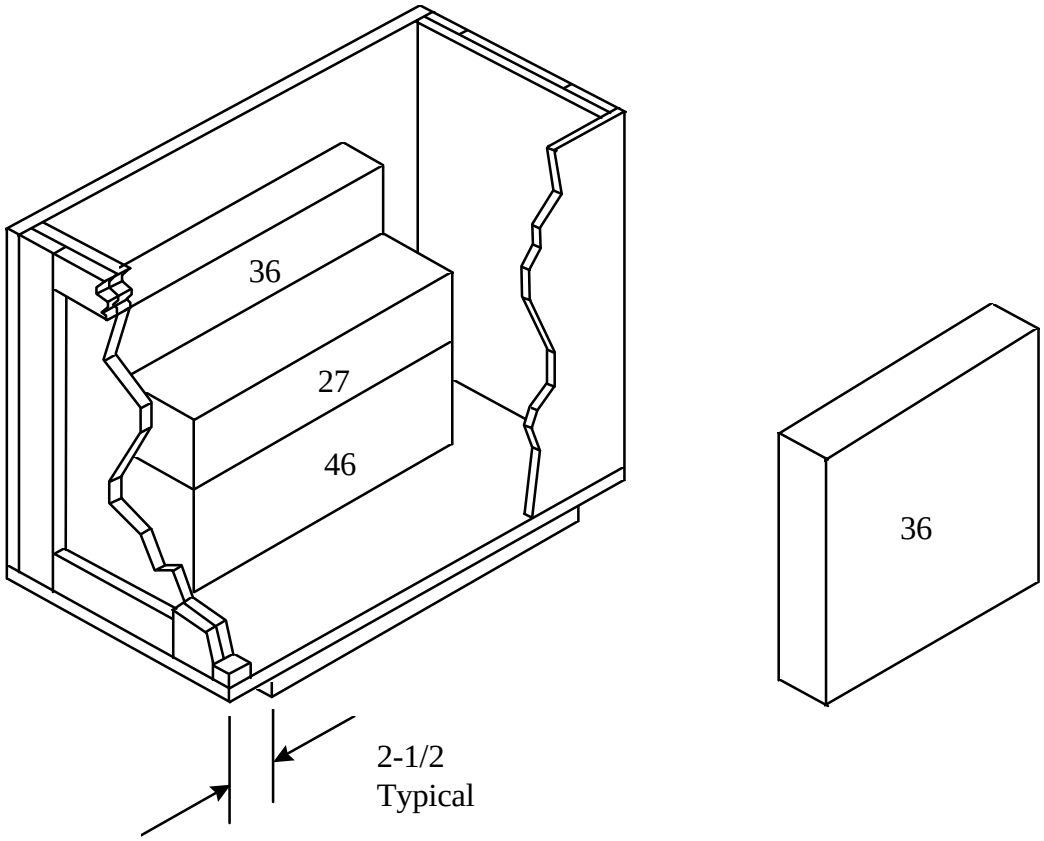
FIGURE 3. Access Covers.



THE BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 24 x 14-1/2 x 25 AND IS MODIFIED TO INCLUDE 2 x 4 (NOMINAL) SKIDS PLACED AS SHOWN. TOP AND BOTTOM OF BOX SHALL BE CONSTRUCTED USING 1/2 INCH THICK EXTERIOR PLYWOOD.

BOX 1 BII BASIC ISSUE ITEMS

FIGURE 4. Unit Container Placement for Box 1.

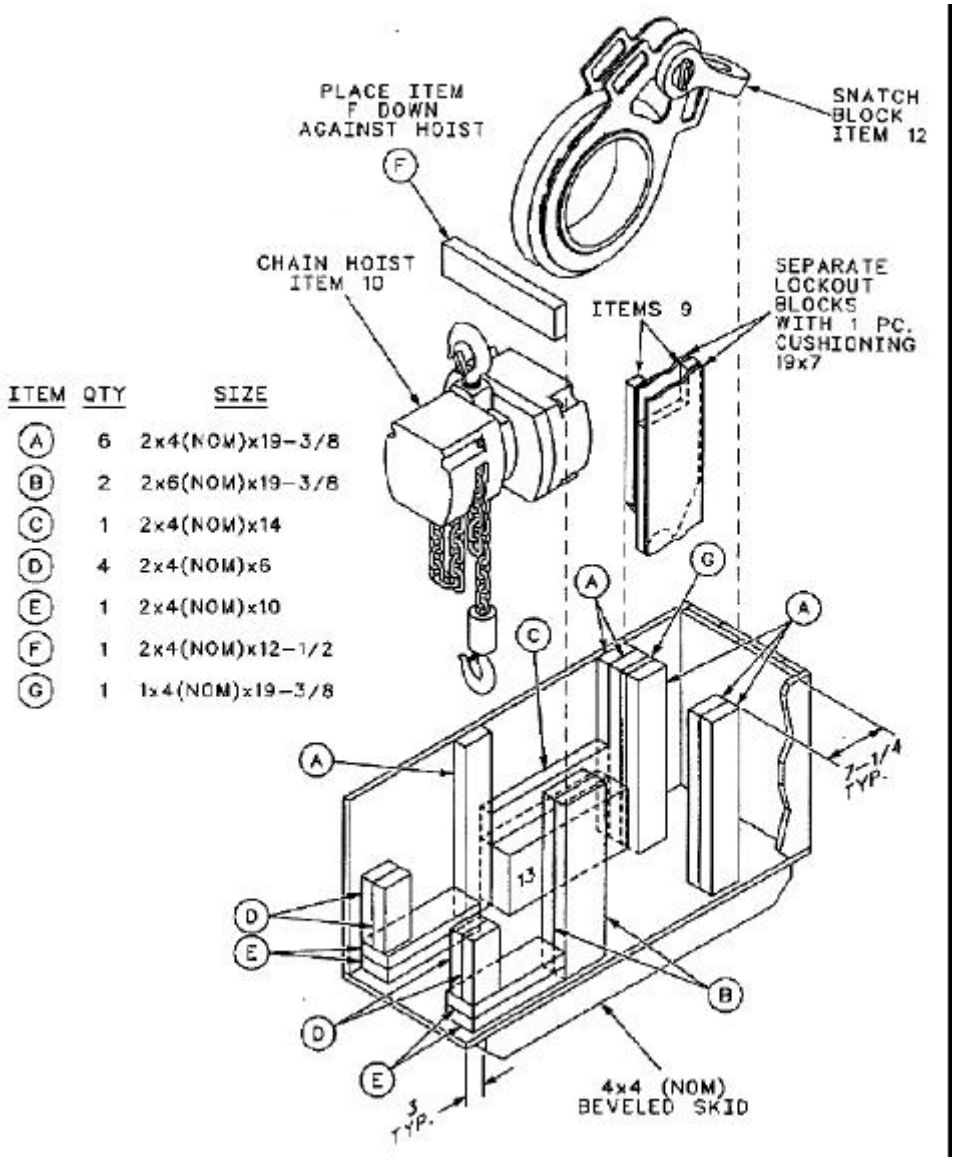


ITEMS 1-3, 6, 18, 19, 26,
28-30, 38, 41, 43, 47-49, 56-60, 69-71
AND TOWBAR PINS (5315-00-539-9174)
PLACED INTO VOIDS.

THE BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 21 x 16-1/2 x 25 AND IS MODIFIED TO INCLUDE 2 x 4 (NOMINAL) SKIDS PLACED AS SHOWN. TOP AND BOTTOM OF BOX SHALL BE CONSTRUCTED USING 1/2 INCH THICK EXTERIOR PLYWOOD.

BOX 2 BII BASIC ISSUE ITEMS

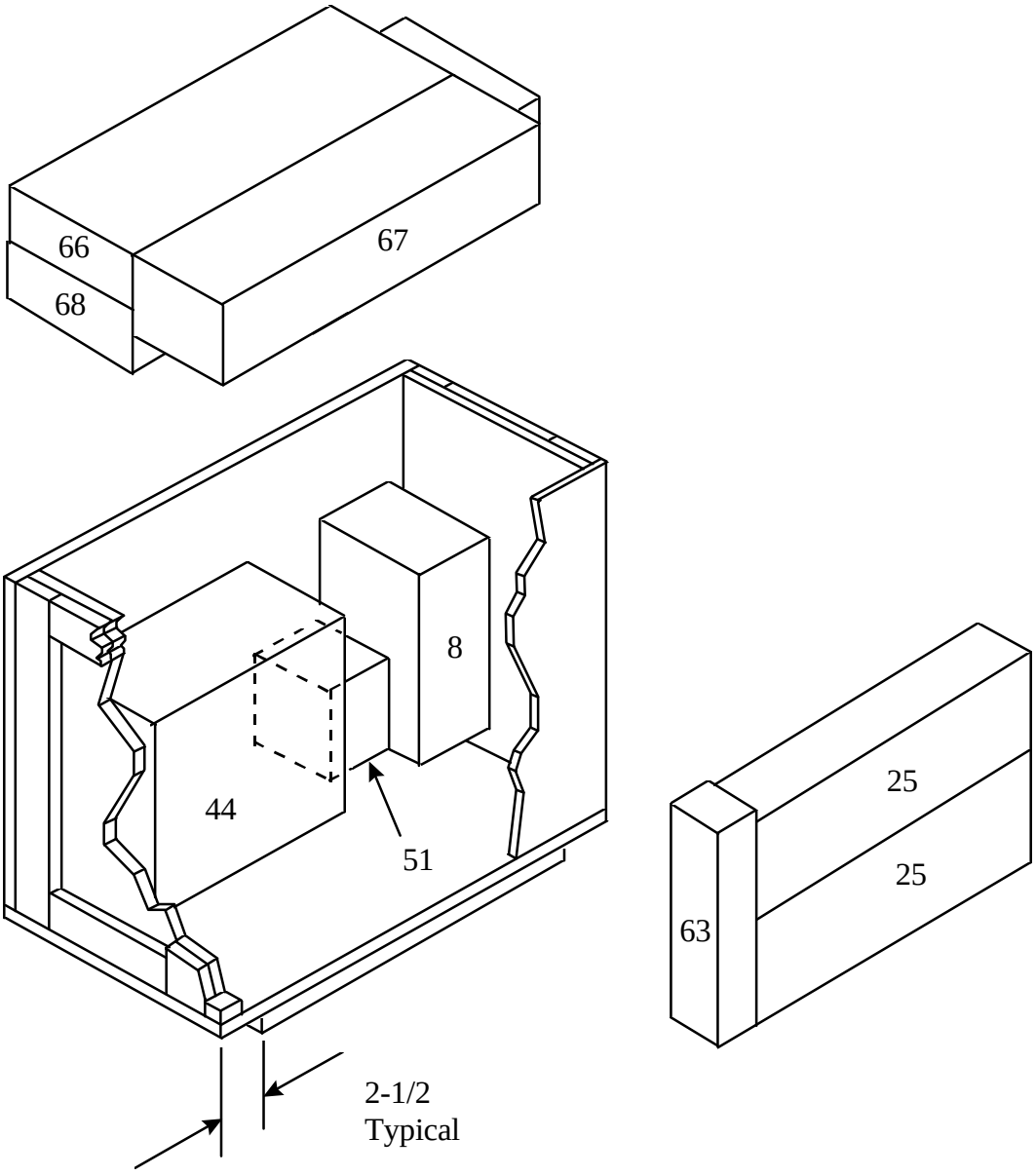
FIGURE 5. Unit Container Placement for Box 2.



THE BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 39 x 12-3/4 x 19-1/2 WITH 4 x 4 (NOMINAL) SKIDS PLACED AS SHOWN. TOP AND BOTTOM OF BOX SHALL BE CONSTRUCTED USING 1/2 INCH THICK EXTERIOR PLYWOOD.

BOX 3 BII BASIC ISSUE ITEMS

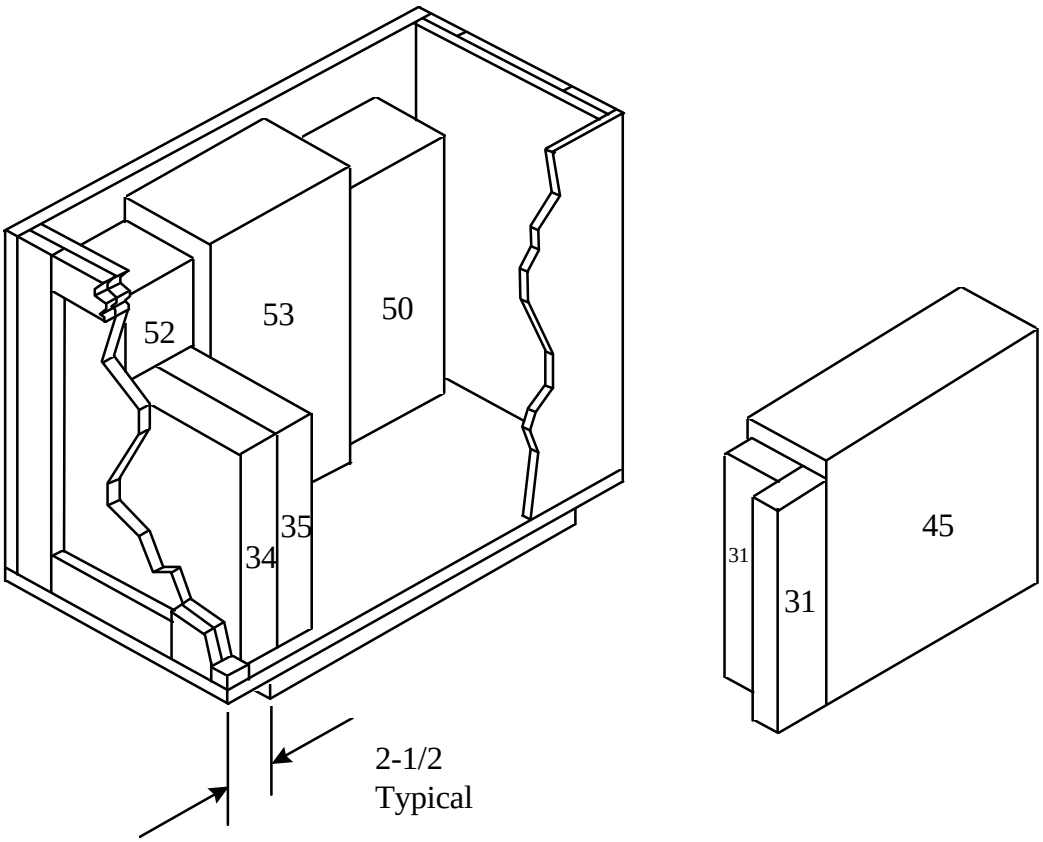
FIGURE 6. Item and Unit Container Placement for Box 3.



BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 30 x 16-1/2 x 25 AND IS MODIFIED TO INCLUDE 2 x 4 (NOMINAL) SKIDS PLACED AS SHOWN. TOP AND BOTTOM OF BOX SHALL BE CONSTRUCTED USING 1/2 INCH THICK EXTERIOR PLYWOOD.

BOX 4 BII BASIC ISSUE ITEMS

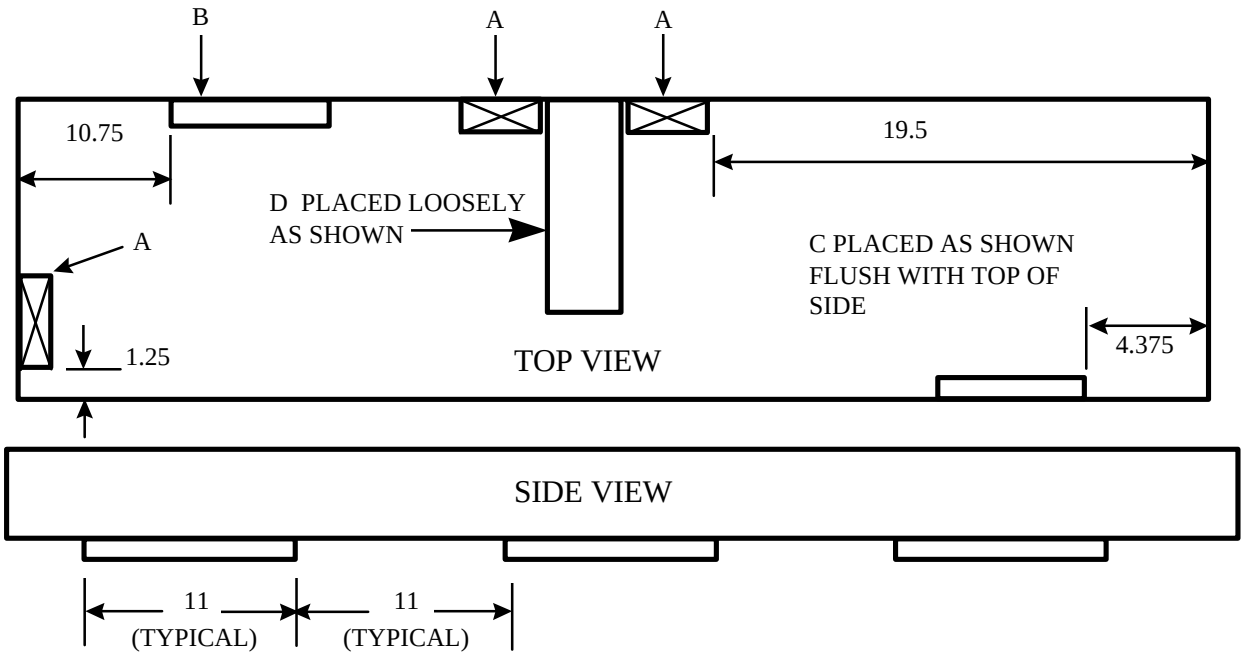
FIGURE 7. Unit Container Placement for Box 4.

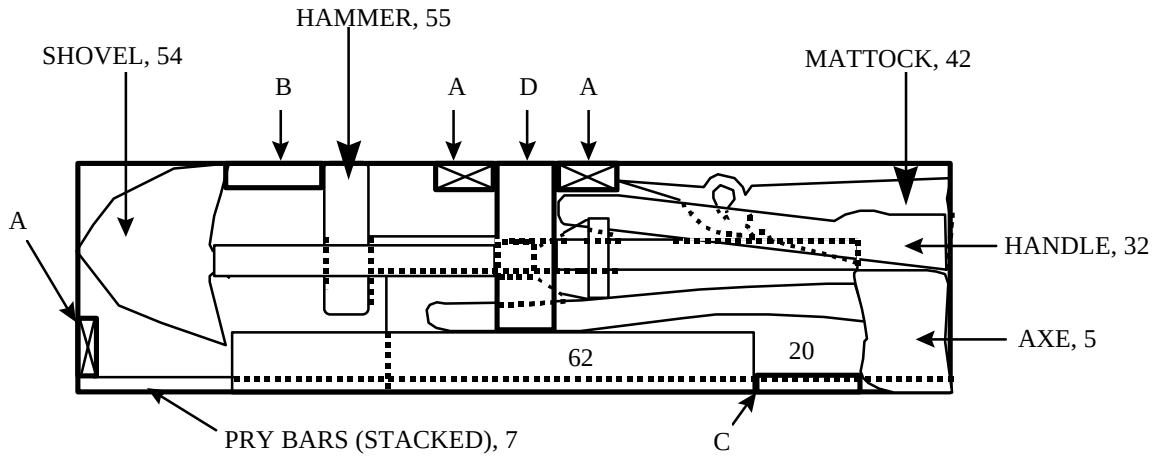


THE BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 33 x 16-1/2 x 25 AND IS MODIFIED TO INCLUDE 2 x 4 (NOMINAL) SKIDS PLACED AS SHOWN. TOP AND BOTTOM OF BOX SHALL BE CONSTRUCTED USING 1/2 INCH THICK EXTERIOR PLYWOOD.

BOX 5 BII BASIC ISSUE ITEMS

FIGURE 8. Unit Container Placement for Box 5.



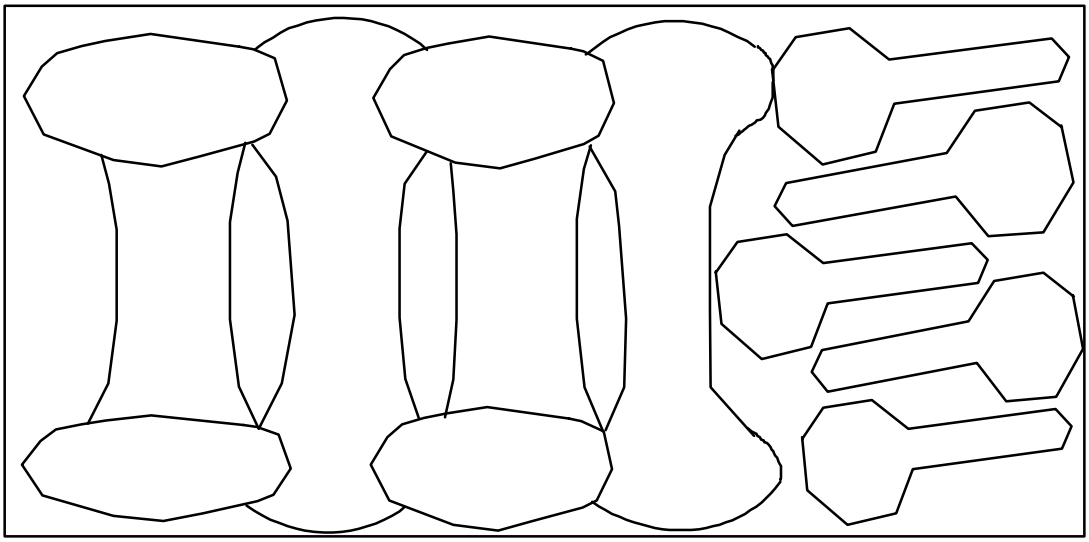


ITEM	QTY	SIZE
A	3	2 X 4 NOMINAL X 5.25
B	1	2 X 6 NOMINAL X 9
C	1	2 X 4 NOMINAL X 6.75
D	1	2 X 4 NOMINAL X 8.5

THE BOX CONFORMS TO PPP-B-621, CL 2, ST 4, SIZE: 59.25 X 12 X 5.5 WITH 2 X 4 (NOMINAL) SKIDS PLACED AS SHOWN ABOVE.

BOX 6 BII BASIC ISSUE ITEMS

FIGURE 9. Item and Unit Container Placement for Box 6.



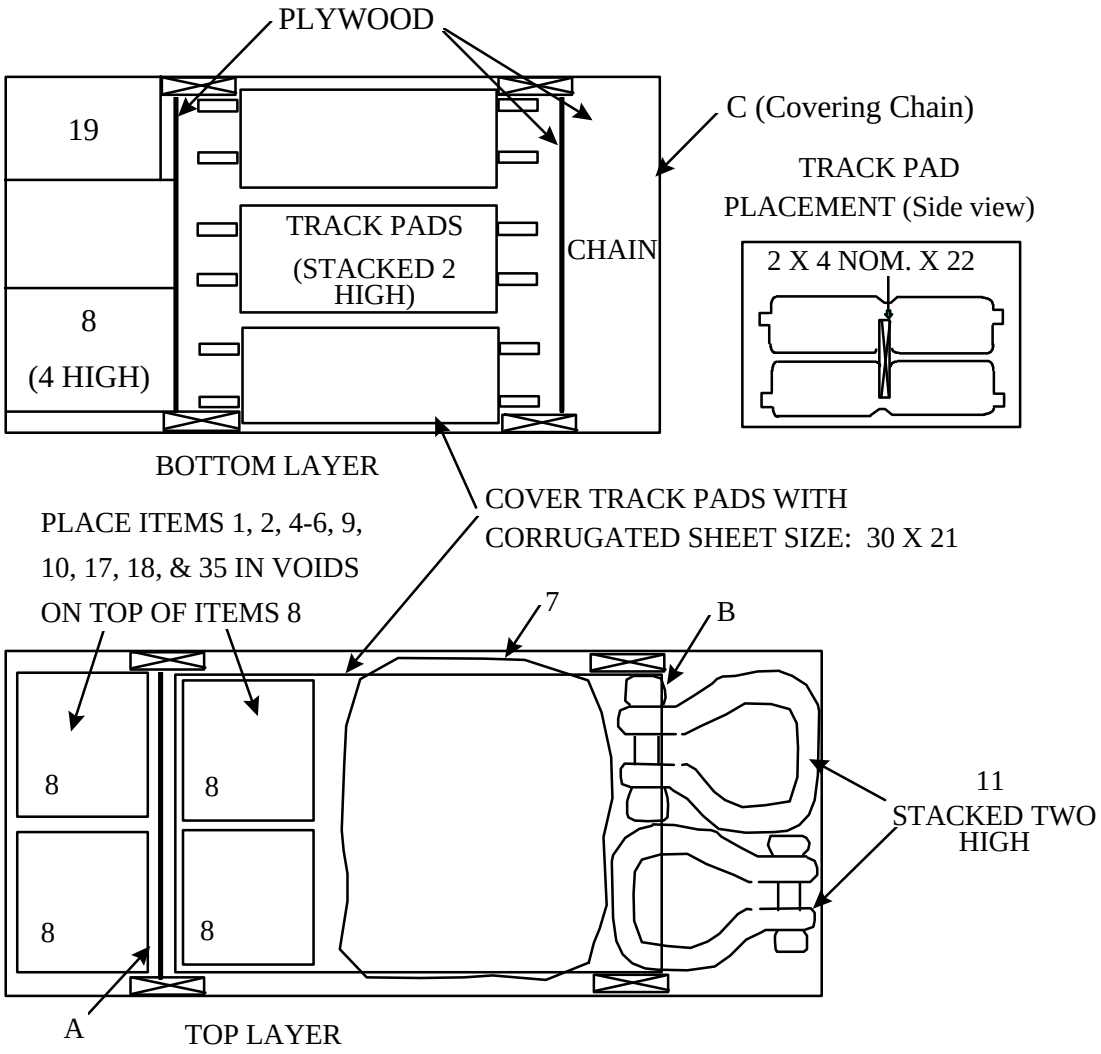
ITEMS 16 (QTY 4)
(Seperated with corrugated sheets size 13 X 10)

ITEMS 15 (QTY 2) ITEMS 14 (QTY 4)
EACH ITEM WILL BE WRAPPED WITH ONE PIECE OF CUSHIONING MATERIAL CONFORMING TO A-A-1051

THE BOX CONFORMS TO PPP-B-621, CL2, ST2, SIZE: 21 X 11 X 15 WITH 4 X 4 (NOMINAL) SKIDS PLACED IN ACCORDANCE WITH PPP-B-621.

BOX 7 COEI COMPONENTS OF END ITEM

FIGURE 10. Item and Unit Container Placement for Box 7.



ITEM	QTY	SIZE
A	1	20-3/4” x 16” x 1/2” PLYWOOD
B	1	20-3/4” x 8” x 1/2” PLYWOOD
C	1	22-1/4” x 9-1/4” x 1/2” PLYWOOD

THE BOX CONFORMS TO PPP-B-621, CL 2, ST 2, SIZE: 50 x 22-1/2 x 16-1/2 AND IS CONSTRUCTED OF ALL 1 INCH THICK NOMINAL LUMBER AND INCLUDES 1 x 4 (NOMINAL) EXTERNAL TOP AND INTERNAL BATTENS. 4 x 4 NOMINAL SKIDS ARE USED IN ACCORDANCE WITH PPP-B-621.

BOX 8 COEI COMPONENT OF END ITEM

FIGURE 11. Item and Unit Container Placement for Box 8.

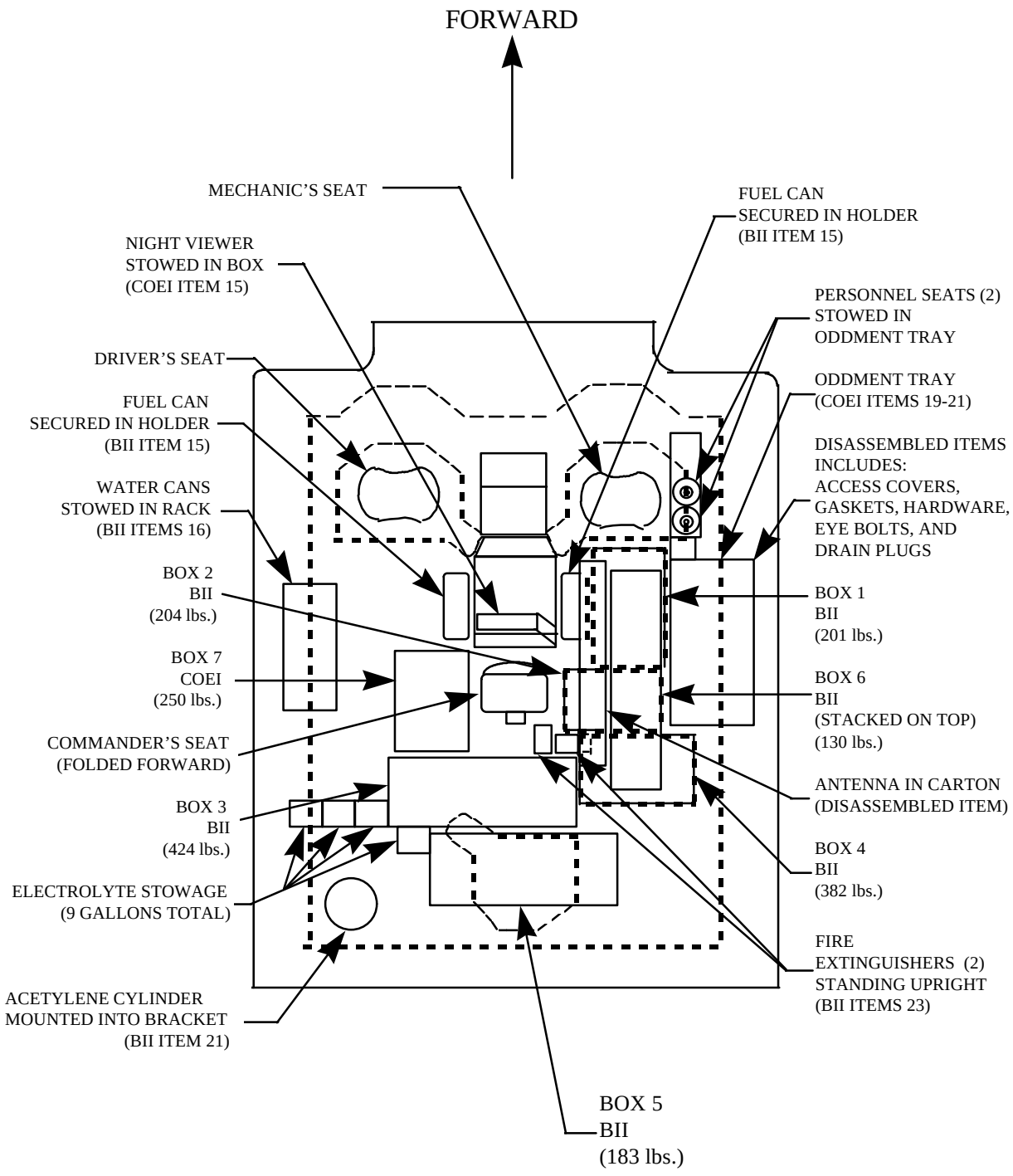


FIGURE 12. Interior Stowage of Component and Support Items

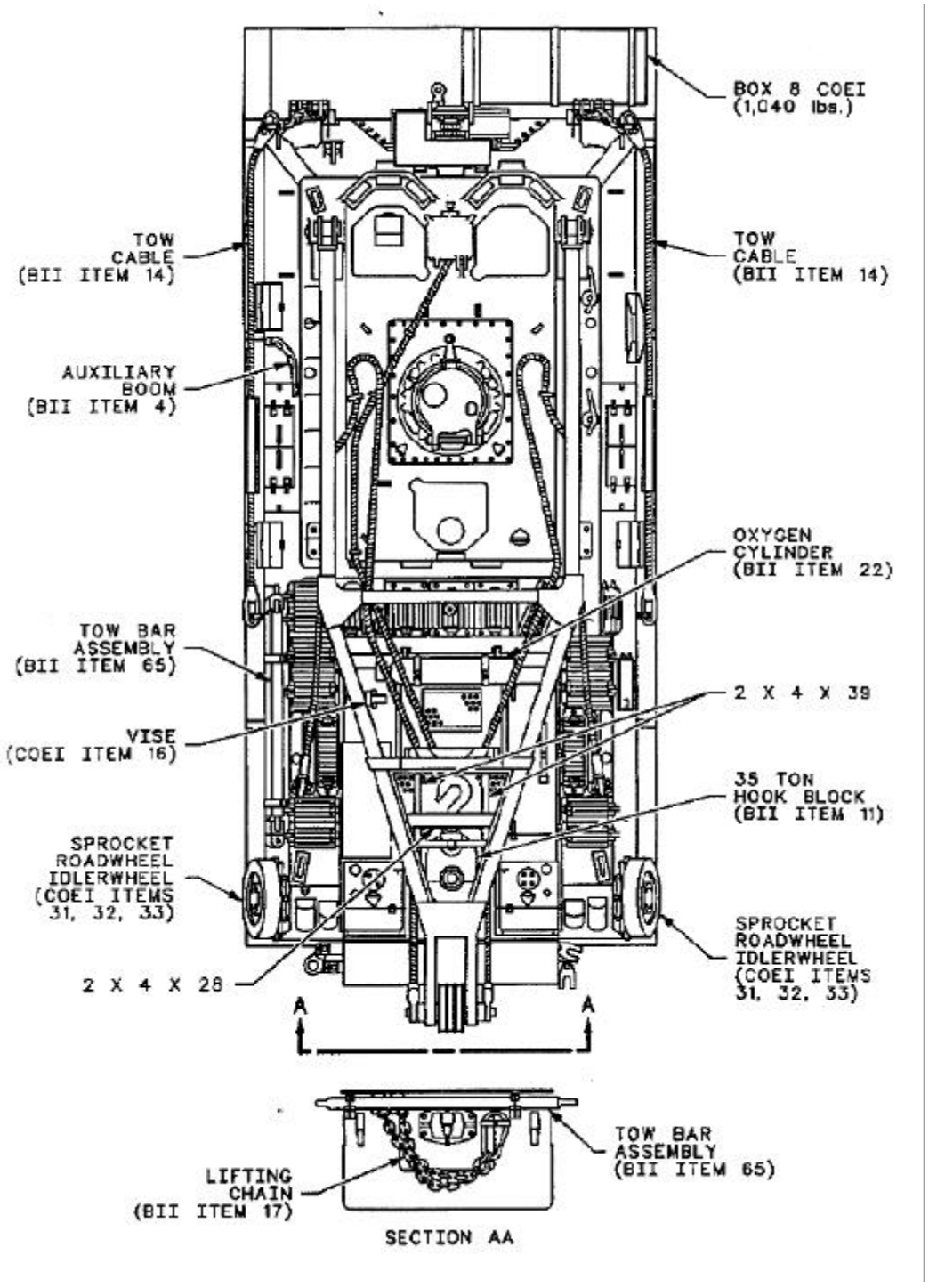


FIGURE 13. Exterior Stowage of Component and Support Items.

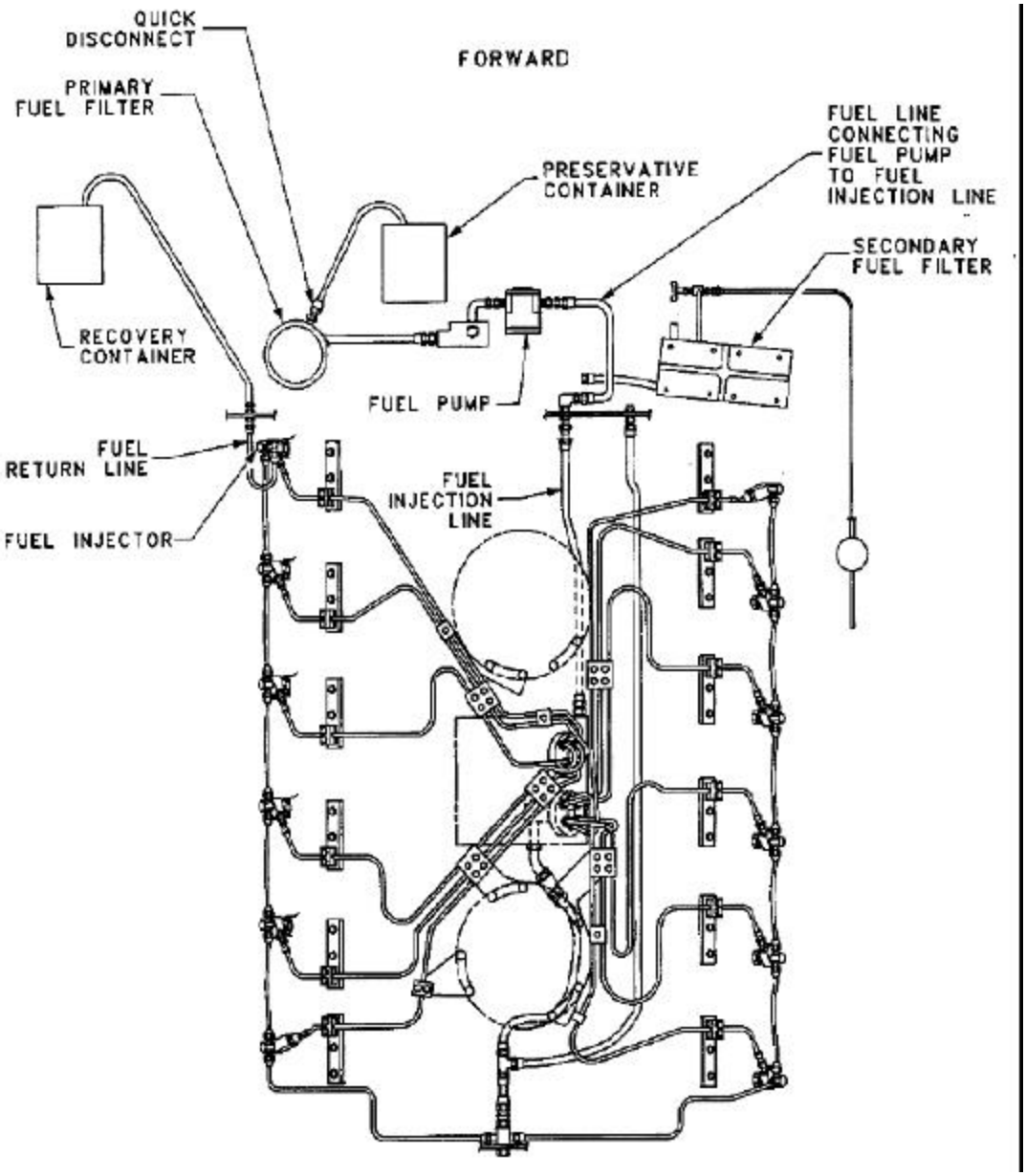


FIGURE 14. Main Engine Fuel System.

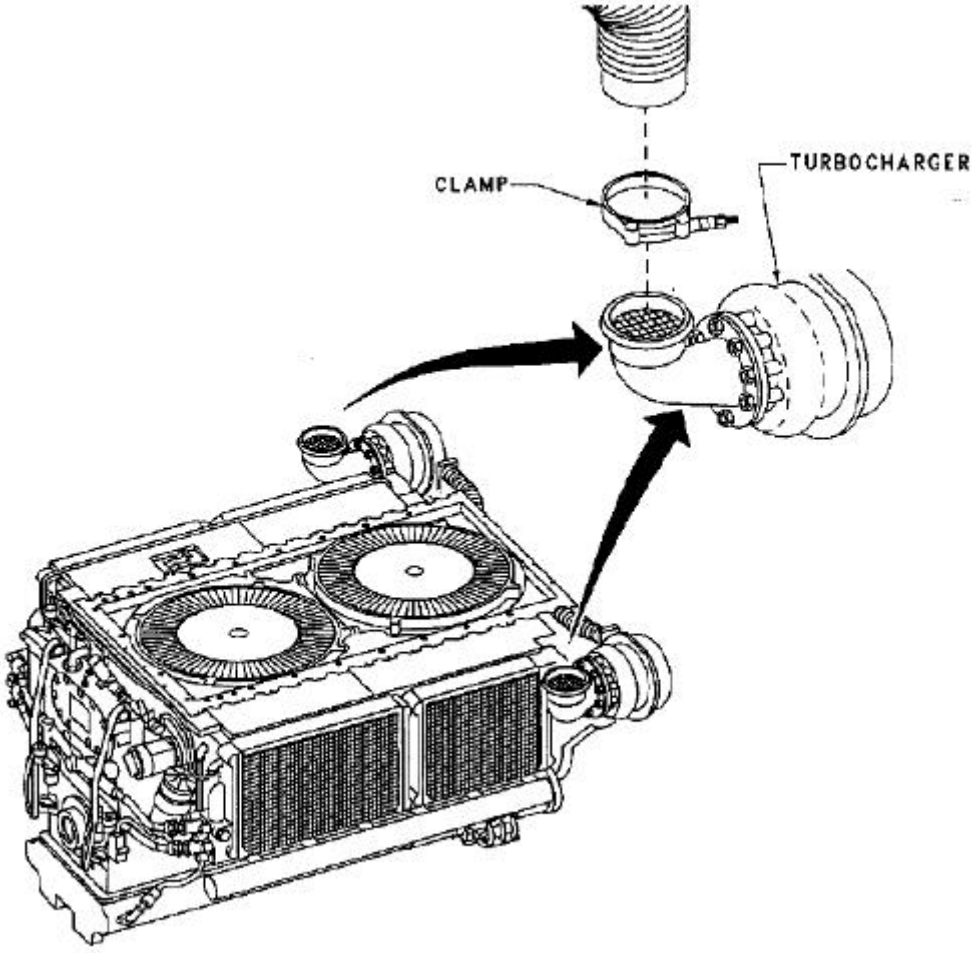


FIGURE 15. Turbocharger.

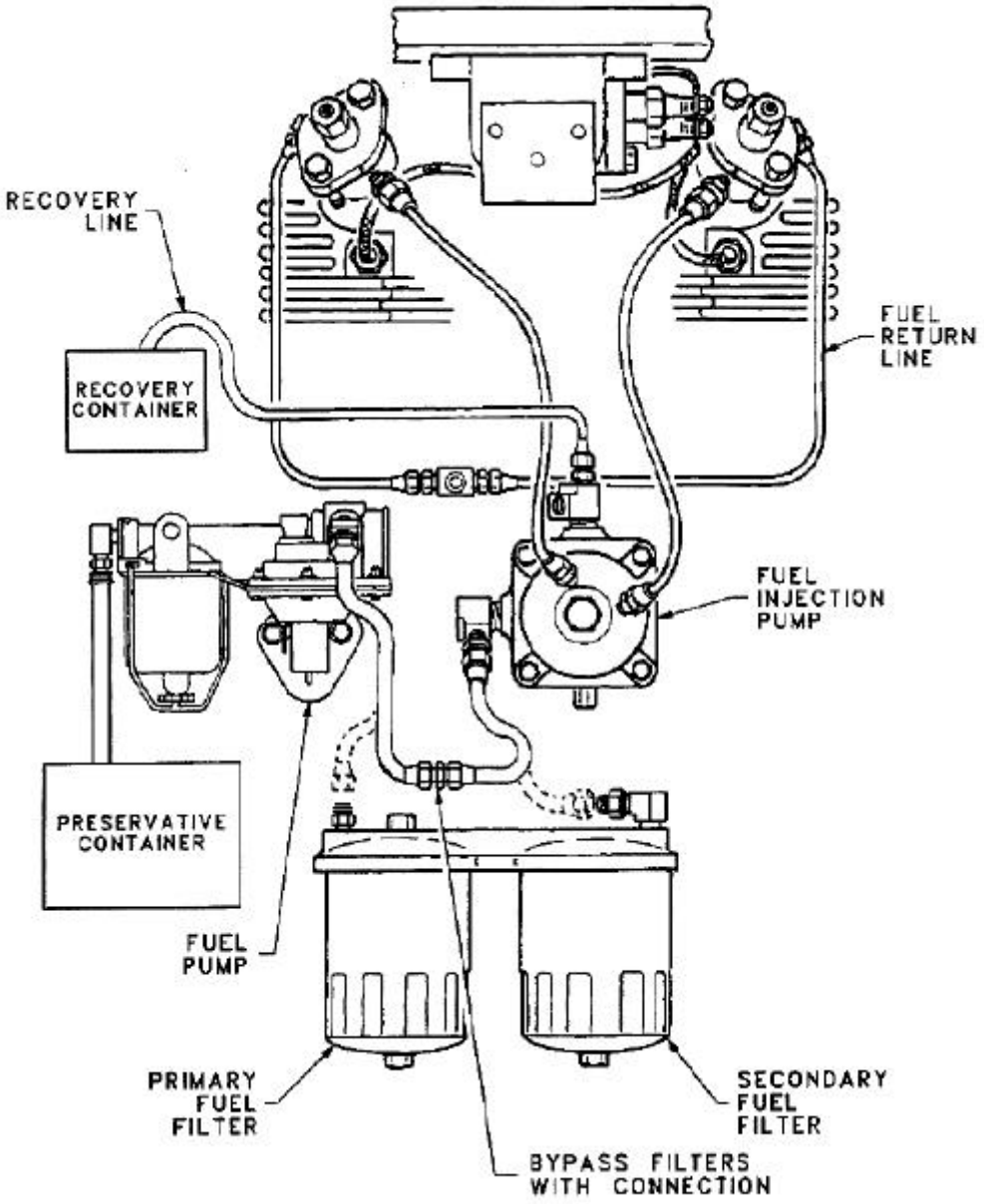


FIGURE 16. Auxiliary Power Unit Fuel System.

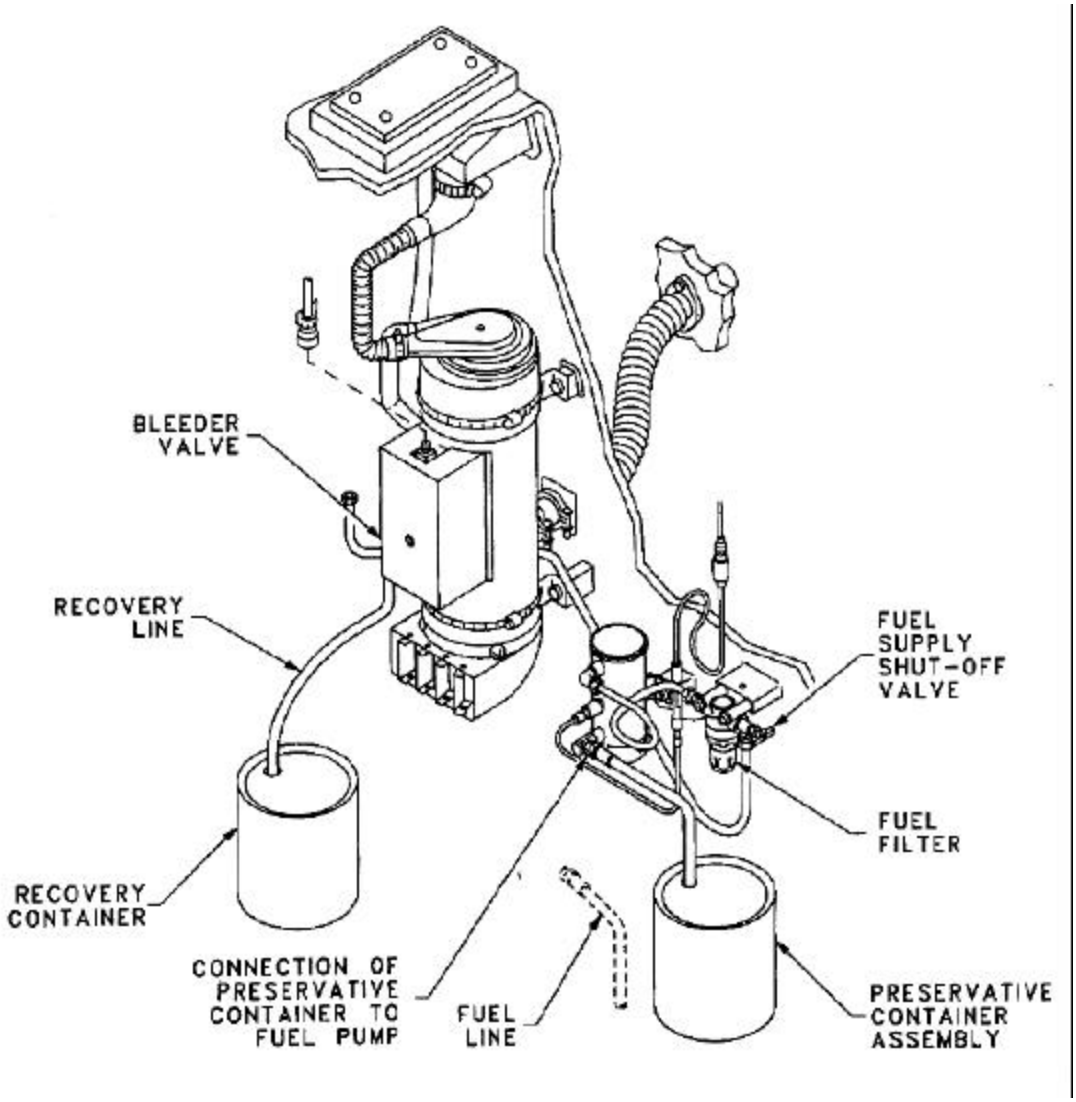


FIGURE 17. Personnel Heater.